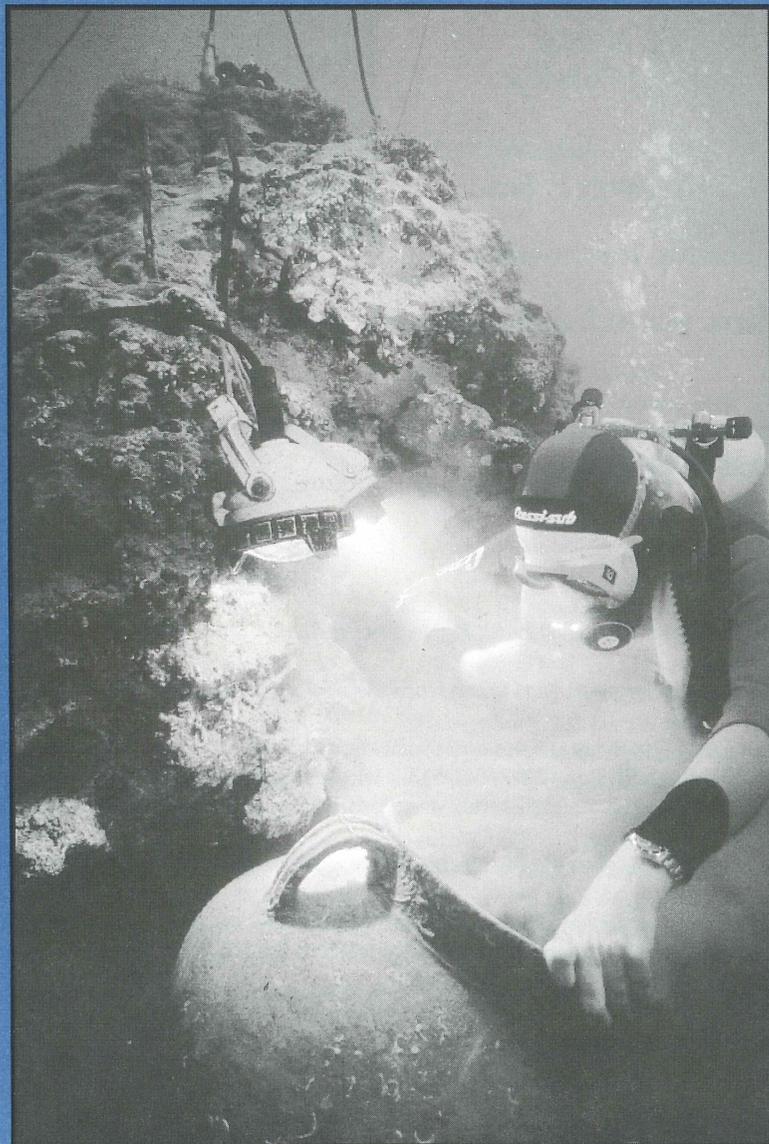


THE INA QUARTERLY



Spring 1998

Volume 25 • No. 1



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The Institute of Nautical Archaeology wishes to thank you, our generous members, who have made all the accomplishments described in this anniversary issue possible!

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On the cover:

Dr. George F. Bass excavating a ceramic krater from one of the last seasons at Uluburun.

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The Home Page for INA and the Texas A&M University Nautical Archaeology Program on the WorldWideWeb is <http://nautarch.tamu.edu>

The Institute of Nautical Archaeology is a non-profit scientific and educational organization, incorporated in 1972. Since 1976, INA has been affiliated with Texas A&M University, where INA faculty teach in the Nautical Archaeology Program of the Department of Anthropology.

The editorship of the *INA Quarterly* is supported by the Anna C. & Oliver C. Colburn Fund.

The *INA Quarterly* was formerly the *INA Newsletter* (vols. 1-18).

Editor: Christine A. Powell

A History of INA Research

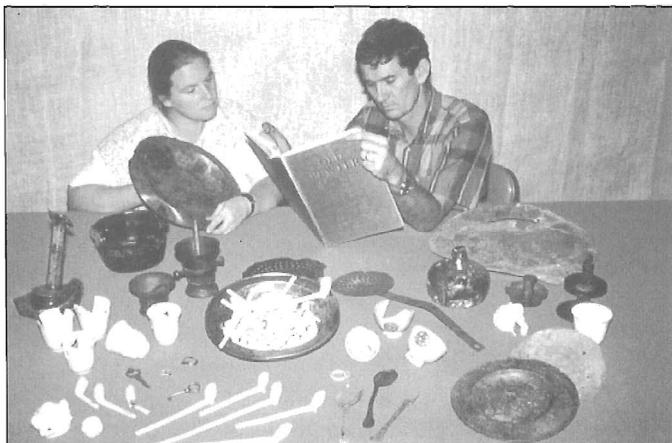
by George F. Bass

In 1972, INA was only a dream, although an incorporated dream. The dream was spelled out in *Proposal for the Foundation of an American Institute of Nautical Archaeology*, which was almost universally ignored. Then, in the spring of 1973, a few farsighted businessmen and women met for the first Board Meeting, and the Institute became a reality. The first year's budget was \$50,000—for everything. Three of the original staff of four had pioneered shipwreck archaeology in the 1960s while still students at the University of Pennsylvania.

I decided to write this note just a couple of weeks before INA's 25th Anniversary Celebration, to remind myself and others how far we have come in our first quarter century. It does not claim, therefore, to be complete—I was not even able to reach some of the staff for their bibliographies, and thus tried to list as many of their titles as possible from the books in my library. I ask that readers fill in any missing blanks so that a corrected version of this may become a permanent record of our early years.

What have we accomplished so far?

There has been no more important an excavation in the field of historical archaeology during the past half century than that conducted at Port Royal, Jamaica, the richest English colony in the New World, sunk beneath the waves in 1692 by an earthquake that submerged houses, inns, shops, and their uniquely preserved contents. That excavation, alone, is more than similar institutes might have hoped to accomplish.



Helen Dewolf and Donny Hamilton examine an array of artifacts from Port Royal.



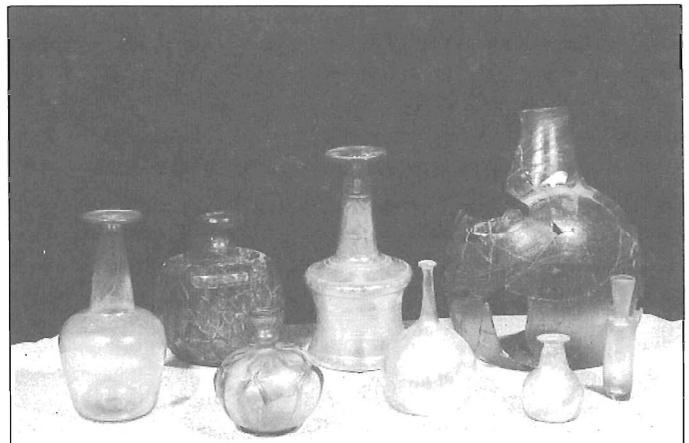
Ascending a staircase of copper ingots, Nicole Hirschfeld raises an amphora from the Late Bronze Age shipwreck at Uluburun.

There has been no more important preclassical Mediterranean site excavated in recent decades than the Uluburun shipwreck in Turkey, with its 18,000 artifacts from nearly a dozen different cultures, twenty tons in all, precisely dated to within a few years of 1300 BCE by the tree rings in a log, perhaps firewood, carried on board. This site is revolutionizing our picture of the Late Bronze Age, the time of the Trojan War, King Tut, and the Exodus. Its excavation, alone, would justify the existence of an archaeological institute.

There has been no more important medieval site excavated in the past half century than the Serçe Limanı shipwreck in Turkey, with the largest collection of medieval Islamic glass in the world (between 10,000 and 20,000 vessels), the largest collections of Byzantine tools and weapons, the earliest dated chess set, and so much more, all dated almost exactly to the year 1025 by inscribed objects on board. The curator of Islamic Art at the Metropolitan Museum of Art in New York has written that

this excavation, alone, has revolutionized the study of medieval Islamic art.

INA researchers have written the definitive history of Lake Champlain, excavated the oldest shipwreck ever found in the New World, excavated the oldest ship ever found in the Old World, were the first to excavate shipwrecks of the American Revolution—both American and British—, have pioneered shipwreck archaeology in East Africa, from Egypt to Kenya through Eritrea, and given the world its first chance to see what a classical Greek ship looked like sailing across



An array of medieval Islamic glass recovered from the shipwreck at Serçe Limanı.

Homer's wine-dark sea! Even now, an INA scholar in Israel is studying the Roman-period fishing boat excavated in the Sea of Galilee by another INA scholar before he joined the institute.

INA archaeologists, already the first to discover an ancient ship with sonar, and already the first to map the seabed with accuracy by means of their own techniques, became the first to excavate a wreck using saturation diving, and set the record for any underwater project undertaken with compressed-air equipment with their 22,500 dives to between 145 and 200 feet at Uluburun, Turkey. INA researchers have made Texas A&M University the center for the conservation of underwater archaeological finds, with current experiments with silicone oils likely to revolutionize the field of archaeological conservation.

In order to disseminate the results of its research in scholarly and popular form, INA has begun four separate publications series: The Nautical Archaeology Series (Texas A&M Press) for major excavation reports, Studies in Nautical Archaeology (Texas A&M Press in the U.S. and Chatham Publishing in the U.K.) for slimmer works, including those written by graduate students as M.A. theses, INA Reports in the *International Journal of Nautical Archaeology*, and the *INA Quarterly* (originally *AINA Newsletter*). It is especially heartening to see how young scholars develop a habit for publishing quickly by writing for the *INA Quarterly* and soon move on to writing books for national and inter-



Test sailing Kyrenia II.

national publishers. Over 400 publications have been written by INA archaeologists and give an idea of the record INA is leaving for future generations.

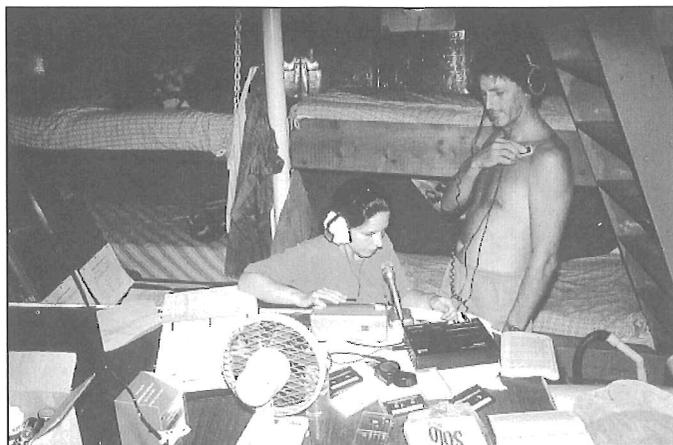
By affiliating with Texas A&M University, INA has advanced the field of underwater archaeology not only in the United States, by training the state archaeologists for several states, but around the world, by training students from Peru, China, Jamaica, Canada, Belgium, Denmark, Greece, Japan, England, South Africa, Switzerland, Turkey, France, and Albania.

In return for the financial aid provided by Texas A&M, INA's many appearances on all the major television networks, its several one-hour specials on PBS-TV, and its articles in *National Geographic* and other popular magazines around the world have all given a positive image of the university to an immense audience.

With a newly discovered shipwreck of the middle of the fifth century B.C., the first ever found from the height of classical Greek civilization, and the prospect of acquiring a submersible that should help locate hundreds of others wrecks, INA has the opportunity for continuing to revolutionize our knowledge of the past in various parts of the world. Equally exciting is INA's development of an in-state program in Texas. Let us hope that INA's second quarter century will be as deserving of celebration as its first, for not only are we writing the definitive history of ships, but we are adding new chapters to the histories of technology, art, commerce, and so much more. ☞



The remains of Santo Antonio de Tanna, a Portuguese frigate which sank in Mombasa harbor in 1697.



Onboard Virazon anchored at Uluburun, Dr. Carolyn Fife (left) conducts her Doppler research on one of the divers in her study group.

Twenty-five Years of INA

by Christine Powell and Dale Rye

Excavation without publication is only destruction. Although articles about our projects, by INA staff and others, runs to many hundreds of titles, we mention in this brief history only preliminary reports published in American Journal of Archaeology (AJA), International Journal of Nautical Archaeology (IJNA), Journal of Field Archaeology (JFA), annual Underwater Archaeology Proceedings from the Society for Historical Archaeology Conference (UAP) [originally The Proceedings of the Conference on Underwater Archeology, and now simply Underwater Archaeology], National Geographic, and a few more. As virtually all of these projects appear in the INA Quarterly (originally AINA Newsletter), those citations do not appear. A complete bibliography will be available by request after September 1998.

1972

The American Institute of Nautical Archaeology (AINA) was incorporated in Pennsylvania by George F. Bass, Ann S. Bass, and Steven Gadon early in 1972. Its mission statement was clear: "The Institute of Nautical Archaeology is a nonprofit, scientific, and educational organization whose purpose is to gather knowledge of man's past as left in the physical remains of his maritime activities and to disseminate this knowledge through scientific and popular publications, seminars, and lectures."

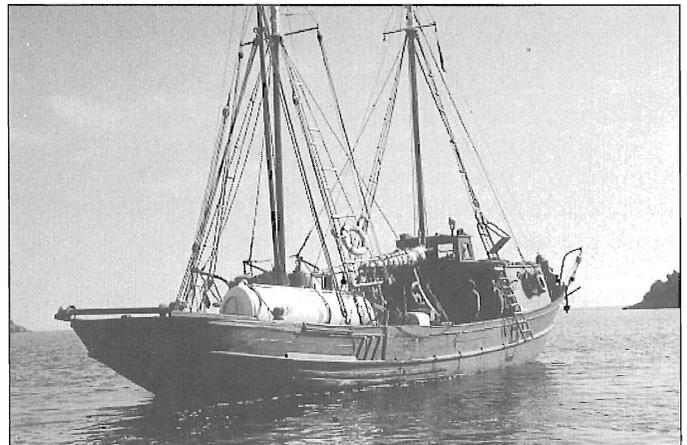
That same year, George Bass published *A History of Seafaring Based on Underwater Archaeology* which has since been translated into Dutch, French, Swedish, Italian and German editions. This book still serves as a basic guide to nautical archaeology.

Board of Directors: Ann Bass, George F. Bass, Chair, and Steve Gadon.

1973

The first Board Meeting in Philadelphia brought together the founding directors, whose support made George Bass's dream a reality. Thus, INA calculates its twenty-fifth anniversary celebration from this meeting.

AINA's first field project was a survey off the Turkish coast directed by Bass. The survey far exceeded all expectations by locating seventeen wrecks, of which at least half a dozen were worthy of future excavation. Almost every period of antiquity was represented—Preclassical, Classical, Hellenistic, Roman, Byzantine, and later—and include those since excavated by INA at Şeytan Deresi, Serçe Limanı, and Bozburun. The survey was published in *IJNA* 3 (1973).



1973 (above) Karodesler, equipped with a chamber, served as AINA's first search trawler.



1973 (left) A Byzantine shipwreck with a cargo of tiles was located during AINA's first Turkish survey.

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1974

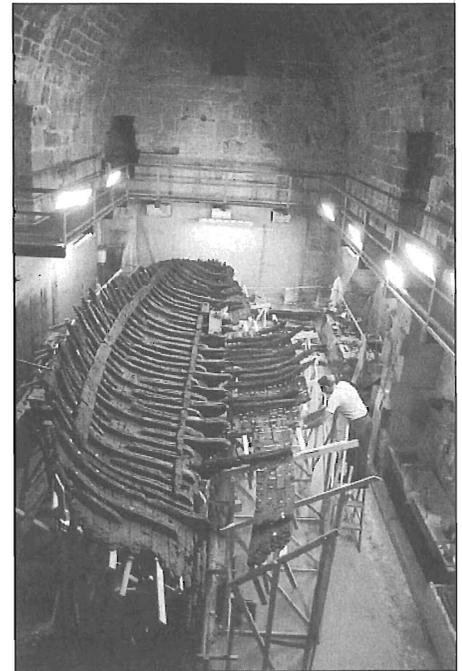
One of the major achievements of the Institute has been the training of students in the discipline of nautical archaeology. Over the years numerous students have participated in excavations and field schools all around the world and many have gone on to lead their own excavations. In 1974, Bass directed the first Summer Field School at Yassiada, Turkey. Although aborted by the Cyprus War, work from this period led to a new publication of the fourth-century Yassiada hull in *IJNA* 5 (1976). One of the aims of the field schools is to train future leaders for underwater excavations both in the Old World and the New. Participants of this first field school have gone on to further research and careers and some have remained in close contact with INA. Faith Hentschel, now Adjunct Professor, was at that first field school and has returned each year to work on all of INA's Turkish projects.

There was a major new addition to the AINA staff this year. J. Richard Steffy joined the team bringing with him his expertise in ship construction. Steffy had long worked with AINA as a consultant developing lines, construction plans, and construction procedures for the Kyrenia ship project. The Steffy/INA relationship has been long and fruitful. Mr. Steffy retired in 1990 after assisting with the publication of the Kyrenia ship, Yassiada ships, and the Athlit ram to name but a few. In 1994 Steffy published the landmark work *Wooden Shipbuilding and the Interpretation of Shipwrecks*, which is the quintessential guide for those who want to know how to document wooden ships and boats.

Work on the fourth-century B.C. Kyrenia Ship and museum displays continued in Cyprus. An extensive article, "Last Harbor for the Oldest Ship" by Susan & Michael Katzev was published in *National Geographic* (November 1974).

The first *AINA Newsletter* (now *INA Quarterly*) was inaugurated by Cynthia Eiseman in the Spring.

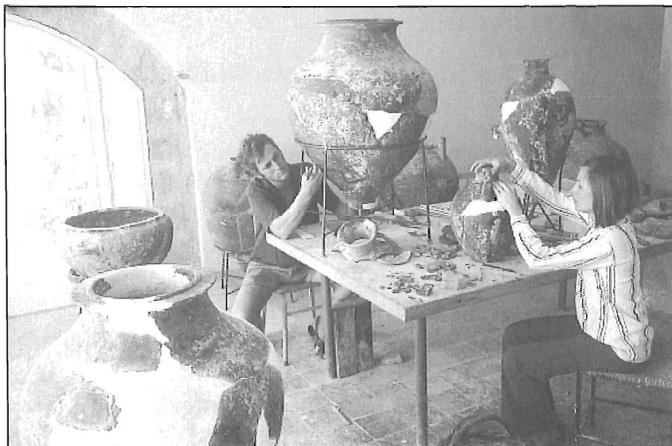
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1974 Richard Steffy restores the hull of the Kyrenia ship.

1975

In the summer of 1972, AINA Director W.F. Searle, Jr. and the Maine Maritime Academy (MMA)/Massachusetts Institute of Technology Summer Sea Grant Project located the American brig *Defence* in Penobscot Bay, Maine. Between June 1 and July 15, 1975, the first scientific excavation of an American Revolutionary War ship began, under the directorship of Bass and Dave Switzer. This was a joint effort between the AINA, MMA and the Maine State Museum.



1975 Robin Piercy and Ann Bass restore the jars from Şeytan Deresi.

AINA's second excavation of this year was conducted on the cargo from ca. 1600 BCE, at Şeytan Deresi (Devil Creek), Turkey, between September 1, and mid October, 1975. Many of the volunteers on this excavation have remained in close contact with the Institute. Both Cemal Pulak and Tufan Turanlı were on this early excavation. Pulak completed his Ph.D. at Texas A&M University in 1997 and is now a Professor with the Nautical Archaeology Program while Turanlı is permanently employed at the Bodrum headquarters and organizes the annual shipwreck surveys. The excavation report was published in *IJNA* 5 (1976). This Middle Bronze Age cargo was the oldest then excavated in the Mediterranean.

Restoration of the classical Greek ship was completed at Kyrenia, Cyprus, by the Katzevs and Dick Steffy. A

one-ton concretion from the wreck was examined and studied and provided a variety of metal objects that greatly aided in the final study of the ship.

In the Spring issue of the *AINA Newsletter* (2.1), Executive Director Cynthia J. Eiseman reported on her doctoral research, the final excavation report on the Porticello Shipwreck. This fifth century BCE wreck from the Italian side of the Straits of Messina was excavated in 1970 by future INA staff members when they were still working for the University Museum. The final publication, *The Porticello Shipwreck: A Mediterranean Merchant Vessel of 415-385 B.C.*, was published by Texas A&M Press in 1987 as part of the Nautical Archaeology Series.

In perhaps the most significant event of the year, AINA affiliated with Texas A&M University and moved its headquarters to College Station. The agreement maintained AINA's status as an independent research institute but provided for the creation of an academic program in nautical archaeology. Bass, Steffy, and, shortly afterward, Fred van Doorninck joined the A&M faculty. In Turkey, Tufan Turanlı joined the staff as Projects Manager.

In January, Don Frey and Robin Piercy spent three weeks at the invitation of the Fort Jesus Museum, Kenya. He was investigating the remains of a Portuguese ship in Mombasa harbor that was believed to be *Santo Antonio de Tanna*, which was sunk during the 1697 siege that led to the loss of the European colony there.

In March and April, George Bass, Donald Frey, and Robin Piercy conducted an underwater survey around western Sicily, including inspection of a Classical wreck at Secca di Capistello (Porticello shipwreck).

In May, AINA began the first scientific excavation of a British vessel from the American Revolutionary War, the "Cornwallis Cave Wreck" in the York River, Virginia, published in *IJNA* 7 (1978). Bass advised the Virginia archaeologists that the next wreck from the Battle of Yorktown excavated in the river should

Bass published *Archaeology Beneath the Sea*, now out of print but sometimes available at used book stores. It is a personal account of the early days of underwater excavation.

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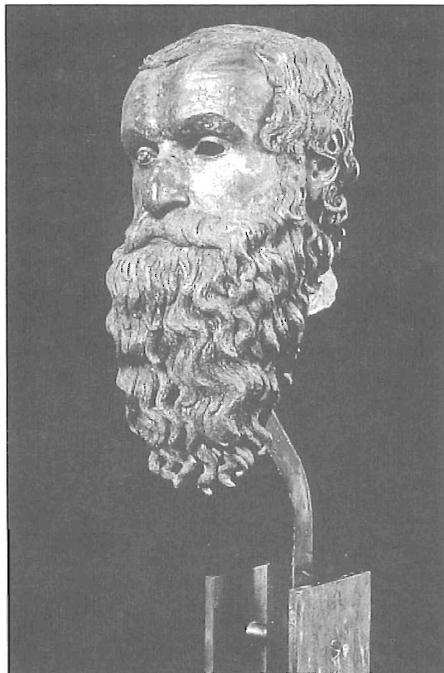
1976

be surrounded by a coffer dam in which the water could be filtered for visibility, with a pier built from land to the dam. This led to the successful excavation of the *Betsy* (see *National Geographic* June 1988).

Excavation of the *Defence* in Maine continued under David C. Switzer. This research was published in *UAP* (1978). The six weeks of work were in conjunction with AINA's fourth summer field school, with twelve students enrolled. On "Bicentennial Sunday," July 4, 1976, the excavation was formally recognized as a National Bicentennial Project.

Excavations began in July at the Minoan harbor town of Kommos on Crete, directed by AINA Adjunct Professor Joseph W. Shaw. This site was inhabited during the Middle and Late Minoan Periods. These excavations are now being published by Shaw and others in a multi-volume set by Princeton University Press.

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1976 Bronze head from the Porticello shipwreck.

1977

In the winter months, excavation of the Portuguese frigate *Santo Antonio de Tanna* (sunk 1697) began at Mombasa, Kenya, under Robin Piercy. This was published in *IJNA* 6 (1977).

During this summer, AINA began its excavation of the eleventh-century "Glass Wreck" at Serçe Limanı, Turkey. As noted above, this was perhaps the most significant

medieval site discovered in the Mediterranean in the past half century. The excavation was published in *IJNA* 7 (1978), *UAP* (1978), and as "Glass Treasure from the Aegean" in the June 1978 *National Geographic*. The final publication for this site is now in the hands of the publishers and expected out shortly. Serçe Limanı Project Co-Director Frederick H. van Doorninck, Jr., had joined the AINA staff in College Station that spring.

Don Frey directed the excavation of a third-century BCE Hellenistic wreck off La Secca de Capistello, Lipari, one of the Aeolian Islands north of Sicily. The wreck, at 65 meters depth, posed special risks; earlier expeditions to the site had suffered four deaths from diving accidents. Even limited scientific exploration required mixed-gas saturation diving with the assistance of divers from Sub Sea Oil Services. The team recovered black-glazed Campanian pottery and Greco-Italian amphoras. The excavation was published in *IJNA* 7 (1978) and *UAP* (1978).

David C. Switzer continued excavation of the *Defence* in Penobscot Bay, Maine. As the only existing privateer of the Revolutionary War period, the ship remains provided important information related to the design and construction of wooden ships of this era. J. Richard Steffy lectured the students at the field school on ship construction and worked on models of the *Defence* with David Wyman. Steffy also served as reconstructor on the Brown's Ferry Project sponsored by the University of South Carolina.



1977 A one-man diving bell Robertina was used during the excavation of the shipwreck found near Lipari.

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1978

During this year, AINA continued with several of its major projects from prior years. As if to mark this, the Cyprus Broadcasting Corporation released a 55-minute color film on the Kyrenia Ship, excavated by a team from the University of Pennsylvania Museum, many of whom were later associated with INA. This film, co-produced by the National Geographic Society, was aired throughout the world.

Bass and van Doorninck directed the second campaign on the "Glass Wreck" at Serçe Limanı, Turkey. Even as the cargo was brought to the surface, work began on the hull. This vessel marked a critical stage in the transition from shell-first to frame-first construction during the Middle Ages.

During the work at Serçe Limanı that summer, word came that the supervising commissioner from the Turkish Department of Antiquities, Oğuz Alpözen, had been ap-



1978 Oğuz Alpözen (left) and Don Frey raise a lead anchor stock found in Serçe Limanı.

pointed director of the Bodrum Museum. This marked a new phase of the relationship between INA and this dedicated scholar, who had participated in almost every Turkish excavation and survey since 1962. Under his direction, the Bodrum Museum—which houses all of INA's Turkish finds since 1960—has become a world-class center for marine archaeology.

Also this year, J. Richard Steffy built a scale model of the colonial vessel raised at Brown's Ferry in South Carolina, published in *UAP* (1978) and, with Alan Albright, in *IJNA* 8 (1979). Robin Piercy continued the excavation of *Santo Antonio de Tanna* in Kenya, published in *IJNA* 7 (1978). The major effort at Mombasa in 1978 was to reveal the details of the ship's stern. During June and July, AINA held its 1978 field school during the fourth season of the excavation of *Defence* in Maine, with David Switzer again at the helm.

However, the year was not exclusively marked by the continuation of preexisting projects. New work included the survey of the sidewheel steamboat *Black Cloud* (sunk 1873) in the Trinity River, Texas, by Texas A&M students, and investigation of the Griffon Cove Wreck in Lake Huron, published in *UAP* (1981).

Since its beginning, INA was pledged to more than simply underwater excavations. Teaching, conservation, and publication were equally a part of its mission. In 1978, Donny Hamilton joined AINA and the Texas A&M faculty. Dr. Hamilton had been director of the Antiquities Conservation Laboratory at The University of Texas at Austin,

where he was responsible for conserving all the material recovered from the 1554 Padre Island shipwrecks. At Texas A&M, he established the Conservation Research Laboratory, which has done outstanding work in this field.

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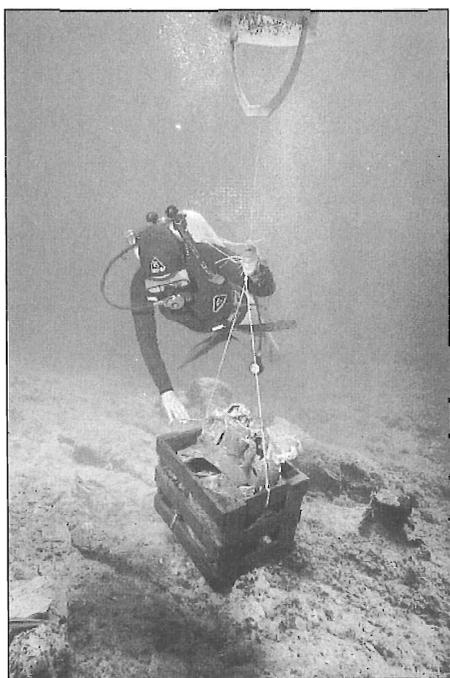
1979

One most significant change for the Institute this year was a change in its legal name. In recognition of the international scope of its staff, directors, and work, AINA (the American Institute of Nautical Archaeology) became simply INA. The *AINA Newsletter* similarly changed its name as of the Spring issue (6.1). An era had ended with the previous issue as the founding Editor, Dr. Cynthia Jones Eiseman, resigned to devote more time to her own research.

George F. Bass and Don Keith conducted a one-month course on underwater archaeology at the National School of Anthropology and History at the University of Mexico. Their work included dives in a sacred lake, Media



1979 George Bass with Mexican students prepare to dive in the sacred lake of Media Luna.



1979 Raising artifacts found during the survey of the ancient anchorage of Serçe Limanı.

Luna, in the state of San Luis Potosi. Elsewhere in Mexico, a joint project with the Instituto Nacional de Antropología y Historia on a 16th-century wreck at Cayo Nuevo in the Bay of Campeche was published in *UAP* (1981).

Several INA projects this year centered around the rich archaeological site at Serçe Limanı, Turkey. The excavation of the medieval "Glass Wreck" was completed, published in *IJNA* 11 (1982) & *UAP* (1981). Cemal Pulak began a test excavation on the nearby Hellenistic wreck, published in *AJA* 91 (1987). Hundreds of amphoras manufactured on the nearby island of Knidos were identified. Finally, an underwater survey of the ancient anchorage at Serçe Limanı by Dorothy A. Slane and Don Frey was published in *UAP* (1981).

An observation of the thirteenth-century Chinese shipwreck excavation at Shinan-gun, Korea, was published by Donald Keith as "A 14th-Century Cargo Makes Port at Last" in the August 1979 *National Geographic*, in *UAP* (1981), and in *IJNA* 10 (1981), with C.J. Buys. This wreck yielded more than 12,000 ceramics and other artifacts and several tons of Chinese coins minted over a span of six centuries ending in 1311.

Donny Hamilton and the Conservation Laboratory preserved a sample of the iron hull plating raised from the famous Civil War ironclad *USS Monitor*. This project was undertaken to develop information on the condition of the wreck, 16 miles off the coast of Cape Hatteras, North Carolina, and to provide insight into the problems that would be involved in the recovery of further material.

The *Defence* excavation continued in Maine, published in *UAP* (1981). Due to the prohibitive cost of raising and preserving the hull, the structure was thoroughly documented in situ. Certain particularly important items were recorded topside before being redeposited within the hull.

The excavation in Mombasa by INA and the National Museums of Kenya of *Santo Antonio de Tanna* also continued in 1979, published in *IJNA* 8 (1979).

A new project this year was INA's first venture into the Caribbean, at the invitation of the Government of the Cayman Islands. Roger C. Smith directed a survey for wrecks around Little Cayman Island, once the busiest of the three islands but inhabited by only fifteen persons in 1979. At least seventeen confirmed sites were found during the first summer of the project.

INA-trained archaeologists were also involved during 1979 in the excavation of Lord Cornwallis's scuttled fleet off Yorktown, Virginia, and the reconstruction of the Dutch East Indiaman *Batavia* for the Western Australia Maritime Museum.

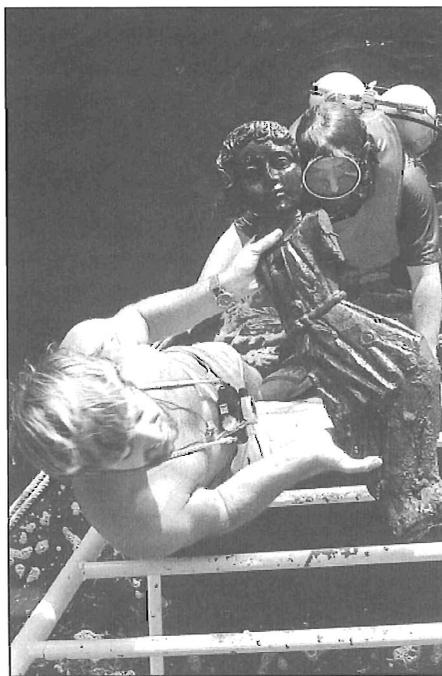
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1980

Several projects represented the continuation of prior work. This year saw the fourth and final season of excavation of *Santo Antonio de Tanna* in Kenya. The preliminary results were published in *IJNA* 10 (1981). In Turkey, an INA team continued the excavation of the Hellenistic Serçe Limanı wreck, published in *AJA* 91 (1987). At Bodrum Castle, the tedious work of reassembling the half million fragments of glass from the medieval Serçe Limanı wreck got well underway. Roger Smith continued the Cayman Island survey, and was joined for part of the season by Donny Hamilton and Vaughn Bryant, Chair of the Texas A&M Anthropology Department. The survey identified over fifty sites around Cayman Brac and the East End of Grand Cayman.

In Mexico, the Instituto Nacional de Antropología y Historia established a Department of Underwater Archaeology, headed by Pilar Luna Erreguerena, a veteran of Serçe Limanı and the Cayman survey. The Department continued the preliminary excavation of the 16th-century wreck in the Bay of Campeche, with Donald H. Keith of INA acting as a consultant.

This year, the summer field school moved south from Maine to Virginia. J. Richard Steffy directed the excavation in the York River. This led to the identification of General Cornwallis's flagship, the fifth-rate man-of-war *Charon*. The results were published in *UAP* (1981). The ex-



1980 This carved wooden angel adorned the stern of *Santo Antonio de Tanna*.

cavation showed how much information can be drawn from even a very poorly preserved shipwreck. In particular, Thomas J. Oertling's study of the *Charon's* chain pump eventually led to his book, *Ship's Bilge Pumps*, published by Texas A&M Press in 1996.

Perhaps the biggest step for INA in 1980, however, was the purchase of its first research vessel. The 65-foot *Virazon* was initially taken to Turkey in 1964 by George Bass for the University of Pennsylvania, but was later transferred to the U.S. Air Force in Izmir. The Institute purchased the ship as a platform for surveys and a base for excavations in the Mediterranean region. Under Captain Tufan Turanlı, *Virazon* has had a distinguished career. That first year, the vessel took part in an underwater survey for wrecks in Turkish waters, published in *IJNA* 10 (1981).

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1981

This seems to have been “the year of the Caribbean.” The Government of Jamaica invited INA to conduct a survey of Pedro Bank off the southern coast. Resisting the blandishments of treasure hunters, the country wished to safeguard its national heritage through properly-managed archaeological investigation. The team, including project director Steve Hoyt and INA Director Sumner Gerard (a former U.S. ambassador to Jamaica), located four 17th-century wrecks. The project was published in *IJNA* 13 (1984).

As a result of this survey, INA was invited to assist in the excavation of other significant Jamaican sites. Donny Hamilton conducted his first test excavations at Port Royal. This was the most economically important English site in the New World between 1655 and 1692, when much of the city sank into Kingston Harbor during an earthquake. As a result of the disaster, Port Royal contained one of the world’s largest collections of undisturbed seventeenth-century British artifactual material. In this first season, the INA team discovered the remains of two buildings. Most importantly, it confirmed the feasibility of conducting controlled archaeological excavations on this incomparable site.

Meanwhile, on the north coast of Jamaica, INA conducted a preliminary survey of St. Ann’s Bay under the direction of Roger C. Smith. This is where Columbus abandoned two ships on his fourth voyage. Although the ships were not located, much valuable work was done at this early center of Spanish activity.

Two older projects also took their place in INA’s agenda in 1981. The survey of Turkish waters from *Virazon*, directed by Don Frey, continued with the assistance



1981 Fred and BJ van Doorninck work on a replica of one of the anchors from the *Serçe Limani* shipwreck.

of local sponge divers. A number of wrecks that may merit future excavation were located. In Maine, the excavation of *Defence* concluded with the assistance of thirty volunteers from Earthwatch.

Two television films provided broad public exposure for underwater archaeology during 1981. One, *The Ancient Mariners*, gave an international audience an overview of INA’s work in the Mediterranean. This program was produced for the *Odyssey* program on PBS as the kick-off for the 1981/82 television season and has been rebroadcast many times since. The other film, *The Ancient Ship of Kyrenia*, produced by the Cyprus Broadcasting Corporation in cooperation with the National Geographic Society,

received a prize at the Thirteenth Festival International du Film Maritime et d’Exploration in Toulon, France.

Also this year, INA adjunct professor Edwin Doran, Jr., published *Wanka: Austronesian Canoe Origins* (Texas A&M University Press). This was an exploration of the anthropological data covering an area from Easter Island to Indonesia and west to Madagascar, interpreted in the light of over forty years of experience with different types of sailing craft.

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1982

In July, INA and the Bodrum Museum of Underwater Archaeology co-hosted a two-week Council of Europe field school. This setting allowed study of the Museum’s exhibits and INA’s conservation work. In addition, participants had the opportunity to dive on the sixteenth-century Ottoman wreck at Yassiada, less than two hours from Bodrum by car and boat. INA had returned to the site to excavate this shipwreck, which partially over-

lay the fourth-century wreck excavated between 1967 and 1974. The project also provided another chance to search for artifacts on the older wreck, whose excavation had been cut short by the outbreak of the Cyprus War.

Don Frey continued his annual surveys along the Turkish coast. He hit paydirt this year with the discovery of the Bronze Age wreck at Uluburun and nine other shipwreck sites. The first dives at Uluburun revealed fifty copper



1982 (above) Divers raise a bombardeta found during the excavation of the Molasses Reef shipwreck.

1982 (left) Diver raises a glazed bowl, one of the few artifacts associated with the 16th-century Ottoman shipwreck at Yassiada.



ingots and four jars, which suggested a date in about the fourteenth century BCE, a century or more older than the Cape Gelidonya wreck forty miles to the east.

In the New World, Don Keith began excavation of the Molasses Reef wreck in the Turks and Caicos Islands. This ship was probably built in the fifteenth century and is the oldest known wreck in the New World. It was published in *IJNA* 13 (1984). Further north, Dick Steffy consulted on the excavation of a seventeenth-century merchantman found during a construction project at Water Street in Manhattan.

Several ongoing projects continued in 1982. In Jamaica, Donny Hamilton went forward with the Port Royal excavation, published in *IJNA* 13 (1984), and the surveys at St. Ann's Bay and Pedro Bank continued. In Kenya, conservation and analysis of the Mombasa Wreck occupied Robin Percy and several others. In Italy, Cynthia Eise-man conducted her studies on the Porticello shipwreck (ca. 400 BCE). In Mexico, progress was made on the joint project with the Department of Underwater Archeology study-

ing a sixteenth-century wreck and other finds at Cayo Nuevo in the Bay of Campeche.

In the final months of 1982, Michael Katzev and Steffy were advisers for the construction of a full-scale replica of the Kyrenia ship. This project was to provide valuable experience in ancient ship construction and navigation.

Several important publications also marked the year. Bass and van Doorninck published *Yassi Ada I: A Seventh Century Byzantine Shipwreck* as the first volume in the new INA Nautical Archaeology Series from Texas A&M University Press. B. Ford and Dave Switzer published *Underwater Dig: The Excavation of a Revolutionary War Privateer about the Defence*.

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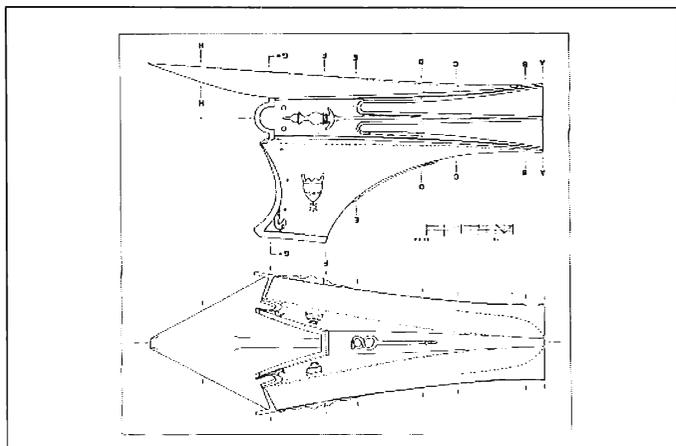
1983

Dick Steffy spent the first two weeks of January in Haifa, Israel completing the field recording of the first ancient warship ram ever recovered. The Athlit ram, and Steffy's study of it, remain crucial to modern knowledge of Classical-period naval technology and warfare.

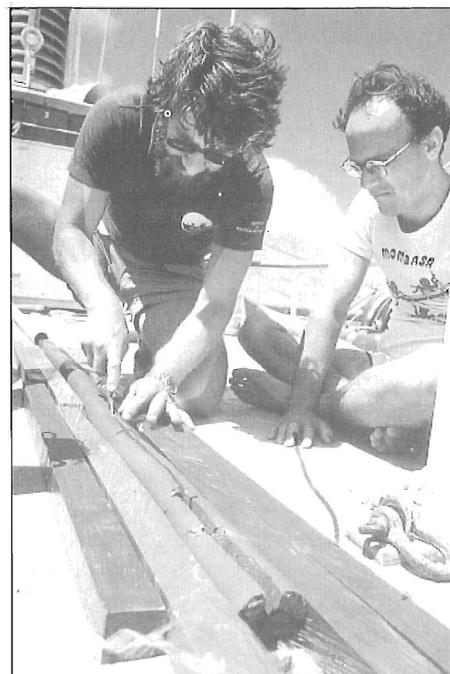
In perhaps the most exciting development of the year, Cemal Pulak and Don Frey conducted the first detailed survey of the Bronze Age wreck at Uluburun, Turkey. This was published in *IJNA* 13 (1984). A photomosaic of the site re-

vealed eighty-three four-handled copper ingots, more than twice the number recovered at Cape Gelidonya. Initial testing showed that hull remains probably survived, and that the ship had connections with the Syro-Palestinian coast.

There was a rush of activity in Turkey in 1983. Earlier in the summer, Pulak directed the second year of excavation of the Ottoman wreck at Yassiada. Surprisingly complete hull remains and surprisingly few artifacts were found. In addition, many amphoras from the seventh-century



1983 (above) Drawing by Richard Steffy of the Athlit ram.



1983 (right) Don Keith (at left) examines one of the cores taken in Isabela harbor.

Yassiada wreck were lifted to examine for graffiti; about eighty markings were found. Don Frey conducted the annual coastal survey, which discovered four promising sites out of a dozen-odd shipwrecks investigated. Of course, the long work of conservation and study on the Serçe Limanı "Glass Wreck" hull and artifacts continued in Bodrum.

In the Caribbean, work at most sites continued. At Port Royal, Jamaica, Donny Hamilton and his team continued their exploration of a submerged brick building, published in *Archaeology* (1984). Rooms in the building had probably contained a meat processing shop, a tavern, and a pipe shop. Port Royal was also the site for a 5-week summer field school. The St. Ann's Bay and Pedro Banks surveys also continued in Jamaica. In the Turks and Caicos Islands, Don Keith and the Molasses Reef team completed their excavation, which was published in *JFA* 12 (1985). The Conservation Lab in College Station began the slow process of conserving over a thousand concreted objects the Molasses Reef team brought back. In addition, the team conducted a survey of a well-preserved sixteenth-century wreck at Highborn (Hyburn) Cay in the Bahamas. This was published in *IJNA* 14 (1985). Keith's group also looked for several of Columbus's ships sunk in a 1493 hurricane near La Isabela in the Dominican Republic. INA and its Mexi-

can colleagues carried out another joint expedition to Cayo Nuevo.

In 1983, Kevin Crisman, while still a student in the Nautical Archaeology Program at Texas A&M University, published *The History and Construction of the United States Schooner Ticonderoga*. This unique vessel was designed as a commercial steamboat but converted to an armed schooner while still on the stocks. Crisman based his book on a two-year study of the hull remains. Another student, Ruby Lang, served as project director for a survey and test excavation on the *Mittie Stevens*, an 1870s steamboat that blew up and sank near the Texas-Louisiana border in Caddo Lake. Cynthia Eiseman, Jim Eiseman, and Don Frey studied and photographed the Porticello material for publication.

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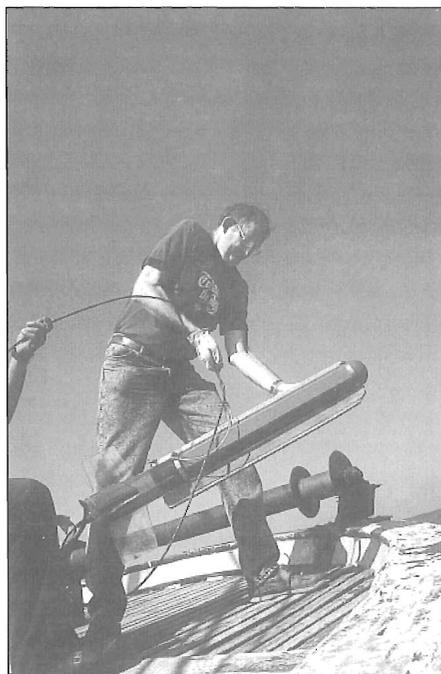
1984

The most memorable event of this year was the first season of serious excavation at Uluburun. A remarkable group of scholars directed by George F. Bass conducted a meticulous exploration of the Bronze Age site. A small field school provided additional workers. The hull remains and

artifactual finds proved to be far richer than anyone had dared to imagine. This first season was published in *AJA* 90 (1986). After the Uluburun excavation closed for the year, *Virazon* carried out the annual survey along the Turkish coast, using special side-scan sonar equipment designed

by INA Director Marty Wilcox. A number of significant sites were found.

In Jamaica, the excavation of Port Royal continued under Donny Hamilton, who conducted a fourth field school on the site. Similarly, the St. Ann's Bay team under Roger C. Smith carried on their search for the two caravels Columbus abandoned in 1504. Don Keith and Tom Oertling returned to College Station to supervise the conservation, analysis, and documentation of the Molasses Reef artifacts. In addition, Keith led a survey on West Caicos for any evidence of survivors from the Molasses Reef wreck. INA and its Mexican colleagues carried out a joint survey of an early sixteenth-century shipwreck at Bahia Mujeres on the coast of Quintana Roo. To provide historical grounding for INA's Caribbean operations, Denise Lakey conducted research in the Archives of the Indies, Seville, Spain. Her findings were pub-



1984 Marty Wilcox prepares to lower the side-scan sonar developed by his company, Marine Sonic Technology.

lished in *UAP* (1985). Elsewhere in Spain, Denise Lakey and Joe Simmons conducted archival research in preparation for a joint survey of the Bay of Cadiz with archaeologists from the Ministry of Culture.

Dick Steffy studied a small Roman boat found at Herculaneum, Italy, one of the towns destroyed by the famous eruption of Mount Vesuvius in 79 CE. The study was published in *AJA* (1985). Steffy was also involved with Michael and Susan Katzev in the construction of a full-scale sailing replica of the Kyrenia ship. The ship was completed in 1984 and passed its sailing trials with flying colors.

Conservation of the Serçe Limani Glass Wreck, Yassiada Ottoman Wreck, *Santo Antonio de Tanna*, and the Molasses Reef Wreck continued on three continents. Especially noteworthy was the beginning of work on reconstructing the Glass Wreck from the timbers that had been undergoing conservation treatment since 1981.

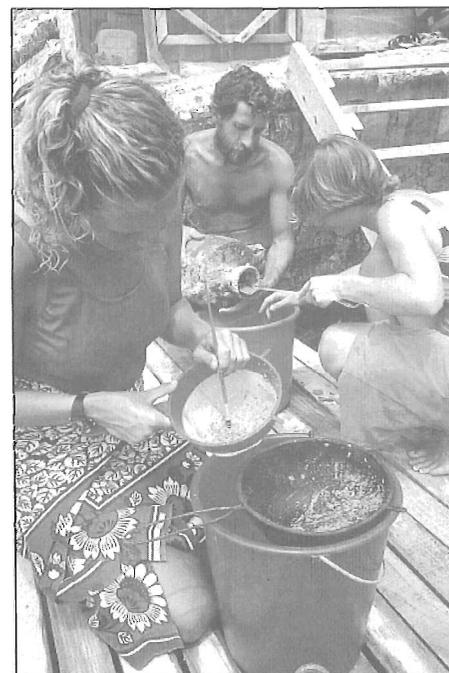
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1985

In June, J. Richard Steffy was named a MacArthur Fellow, an honor bestowed on "individuals who show exceptional promise, dedication, and capacity for self-direction" in their chosen field. This honor carried with it a five-year tax-free annual grant to be spent at the honoree's personal discretion. The grant enabled Steffy to carry out research with a minimum of institutional duties and report-writing. Indeed, it enabled him to write the definitive text on wooden ship construction and reconstruction.

1985 (left) Sheila Matthews restores the Serçe Limani hull, using bicycle spokes to secure the timbers.

1985 (right) Sieving the contents of one of the Canaanite jars found at Uluburun.



The prize was appropriate in this year particularly, as INA and various Nautical Archaeology faculty and students were engaged in a number of reconstruction projects, including the Athlit Ram, the Glass Wreck, the Kyrenia replica, the Molasses Reef Wreck, and Dutch vessels studied by Fred Hocker and Aleydis van de Moortel. Conservation of all these ships and their artifacts, as well as the materials from *Santo Antonio de Tanna* and the Yassiada Ottoman Wreck continued around the world.

The excavation of the Bronze Age shipwreck at Uluburun, Turkey, continued for a second season, and was published in *AJA* 92 (1988). In addition to the previously noted copper ingots, tin and glass ingots were also found. Cheryl Haldane Ward discovered that most of the fifty Canaanite jars contained resin. Cemal Pulak began his study of the assemblage of balance pan weights. Many

other artifacts were found, but at this stage the mixture of origins still represented somewhat of an enigma.

Donny Hamilton continued his work at Port Royal, Jamaica, where another summer field school was held. One significant innovation was INA's first use of computers in the field to manage databases and mapping.

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1986

In what has to have been one of the most "visual" of nautical archaeology stories, *Kyrenia II* sailed up the Hudson River in a Tall Ships Parade honoring America's Fourth of July. Following the replica's return to Greece, it sailed to Cyprus, where it was greeted by more than 12,000 well-wishers at Pathos and by great crowds elsewhere on the southern coast.

The major projects at Uluburun and Port Royal continued to dominate INA resources this year, but there were many other irons in the fire as well. Cemal Pulak undertook direct supervision of the Bronze Age wreck, which was published in *AJA* 93 (1989). Among the most significant finds was a gold scarab of Queen Nefertiti, which has allowed establishing a synchronism between the Egyptian king lists and the absolute dating established at Uluburun by dendrochronology. The world's oldest writing tablet was also found among the significant discoveries of this season.

Donny Hamilton continued excavation of Port Royal, Jamaica, with twenty-two students in the summer field school. Two buildings were investigated, and the bastions at Fort James were mapped.

INA continued its focus on the Ships of Discovery with the excavation of a 16th-century wreck at Highborn Cay, Bahamas, published in *IJNA* 18 (1989). A team headed by Don Keith finished the detailed study of the Molasses Reef Wreck in the Turks and Caicos Islands. Team members also carried on archival research in Spain.

The annual survey off the Turkish coast continued under Don Frey. This year, a number of significant ancient and medieval sites were found. At Bodrum, conservation and study continued in its routine. Fred van Doorninck studied an assemblage of more than seven hundred amphoras from the seventh-century Yassiada and eleventh-century Serçe Limanı shipwrecks, discovering that many had been recycled.

INA faculty had a number of achievements in 1986. George F. Bass received the Gold Medal for Distinguished Archaeological Achievement
(continued on page 19)

1986 (left) A gold scarab of Queen Nefertiti was found at Uluburun.

1986 (right) This test trench revealed the well preserved mast step of the Highborn Cay shipwreck.

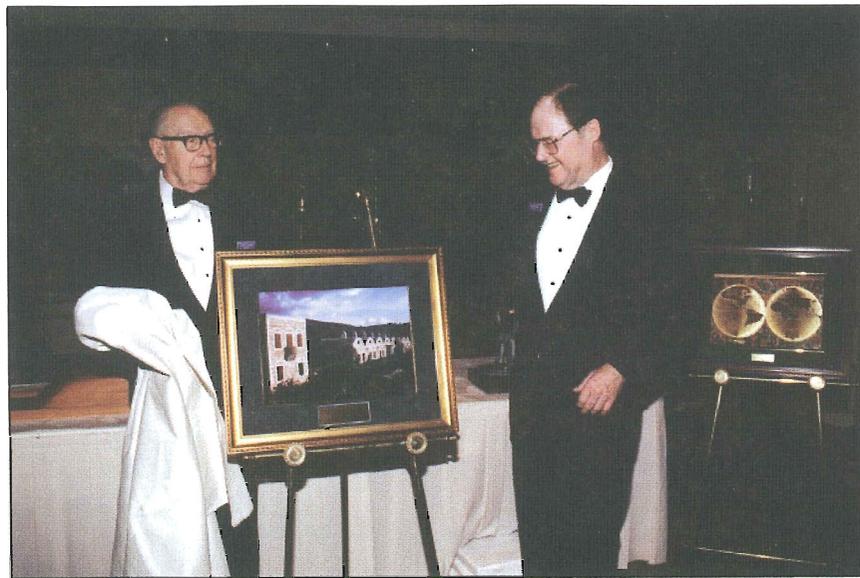


Scenes from the INA Anniversary Gala

Coming from as far away as Istanbul, Paris, London, Hawaii, and Vancouver, INA Directors and patrons gathered at the Mansion in Dallas in January, 1998, to help celebrate the Institute's Twenty-Fifth Anniversary. After a banquet on the first night, all those who have done so much to make INA a success during its first quarter century were recognized. The pictures on this and the following pages can show only a few of these generous friends.☞



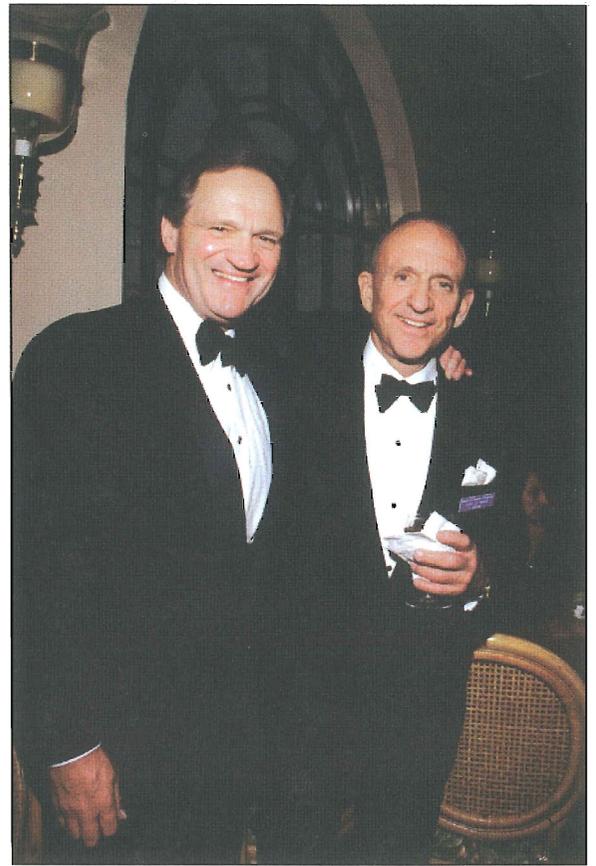
Dr. Fred Hocker (left) presents a half model of the hull of the eleventh-century CE "Glass Wreck" excavated at Serçe Limanı to Jan and Frederick Mayer, recognizing them as INA's all-time most generous donors.



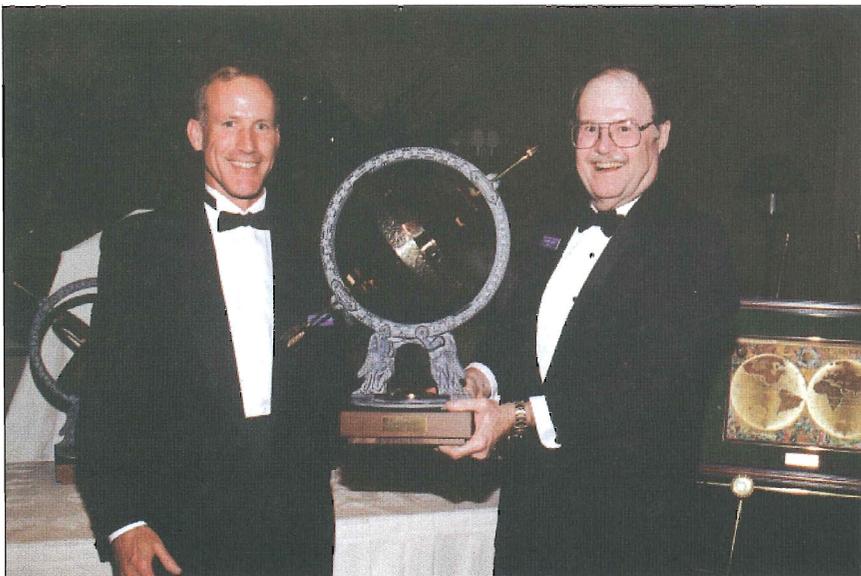
Founding Director John Baird of Cleveland (left) recognizes the twenty-five years of INA leadership by Dr. George Bass with a laser photograph of the INA headquarters in Bodrum, Turkey.



Barbara Duthuit of France (left) and Zelfa Olivier of Great Britain were among the international guests attending the 25th anniversary Gala.



INA Director Garry Weber of Dallas (left) with fellow Director Lew Ward of Enid, Oklahoma.



INA Board Chairman Gregg Cook (left) receives an INA armillary from Dr. Bass in recognition of his family's support through the years.



Dr. George Bass (left) with Northwest Friends of INA founders Mary and Dick Rosenberg of Portland, Oregon.

Sharing Fond Memories



INA Vice President Dr. Don Frey (left) with long-time Director Harry Kahn.

Mr. Ray H. Siegfried II (left) of Tulsa accepts thanks for his years of service and support from Dr. George Bass.



(continued from page 15) from the Archaeological Institute of America, and the Lowell Thomas Award for Underwater Exploration from the Explorers Club. He was also named to the George T. and Gladys H. Abell Chair in Nautical Archaeology at Texas A&M University. Kevin Crisman published *Of Sailing Ships and Sidewheelers: The History and Nautical Archaeology of Lake Champlain*. Dick Steffy consulted on the Sea of Galilee Boat salvaged by Shelley Wachsmann, which was published in *IJNA* 16 (1987). Fred Hocker recorded a seventeenth-century passenger ferry in Lelystad, Netherlands (to be published in 1998).

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1987

The fourth season of work at Uluburun highlighted the year. As the excavators, now directed by Cemal Pulak, uncovered the central part of the site, they found both anchors and eggshells. An almost intact ostrich egg had lain on the sea floor for almost 3300 years until the INA team recovered it. It was discovered that the 200 copper and tin ingots had been placed in layers that preserved the curvature of vanished parts of the hull. The excavations were published as "Splendors of the Bronze Age" in the December 1987 *National Geographic*. A film on the Uluburun project produced by INA Director Jack Kelly and directed by Robert Dalva, *Voyage from Antiquity*, was aired in America as the NOVA episode "Ancient Treasures from the Sea."

George Bass and INA Director Claude Duthuit returned to Cape Gelidonya, the scene of the first underwater excavation conducted to archaeological standards. The 1960 work directed by Bass and Peter Throckmorton set a standard for the field. However, the brief visit in 1987 contributed a number of new artifacts.

The excavation of Port Royal, Jamaica, continued. Two buildings had been completely excavated, and three others examined in part. In front of a doorsill in one of these, the excavators found the remains of a young child who had been killed in the 1692 earthquake. One of the great advantages of historical archaeology is the ability to draw on written accounts to illuminate physical evidence. In addition to its work underwater, the team headed by Donny Hamilton was spending a great deal of time locating and microfilming the relevant Jamaican public records.

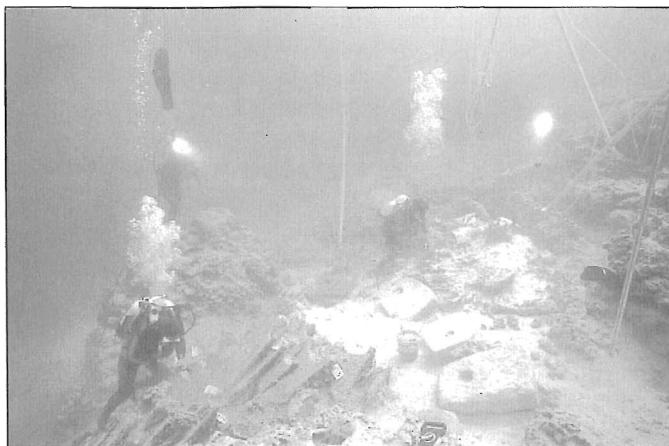
Don Keith and the Exploration and Discovery Team continued their search for one or more of the twelve vessels known to have been lost by Columbus. In 1987, their search focused on the mouth of the Rio Belen in Panama, where the car-

avel *Gallega* was abandoned in 1503. The Team's work at Molasses Reef had yielded some eight tons of iron artifacts. Conservation and study of these continued in 1987. Much of the project's efforts focused on the largest collection of ordinance from a discovery-period ship. This work was published in *IJNA* 18 (1989). Bill Lamb studied the ballast stones and found that many had come from the area of Lisbon, while others were from Bristol and the Canary Islands or Azores.

In Turkey, other conservators continued their work preserving and documenting materials from the Serçe Limanı "Glass Wreck" and Yassiada Ottoman wreck. The eleventh-century Serçe Limanı ship was reassembled by Sheila Matthews in a new ship museum at Bodrum, with a replica of the midships section built by Fred Hocker. *Virazon* carried out a three-week survey, finding two "new" shipwrecks—a Rhodian amphora carrier from the third or second century BCE and a Byzantine ship from the late seventh or early eighth century CE. The survey also found additional evidence of a Late Roman wreck located in 1972.

Dick Steffy and Michael and Susan Katzev were involved in sailing tests of *Kyrenia II*, which sailed from Cyprus to Greece. The ship encountered weather varying from dead calm to severe storms, providing considerable information about the performance of ancient ships under these conditions

INA staff, students and faculty were busy throughout the world in 1987: Fred Hocker established a cooperative relationship between INA and the Dutch Museum of Ship Archaeology (later the Center for Ship Archaeology, and now the National Institute for Ship Archaeology). Cheryl Haldane Ward served as a consultant to the National Geographic Society on the Royal Boat Project by the



1987 In the central portion of the Uluburun hull lay four of the ship's 24 stone anchors.

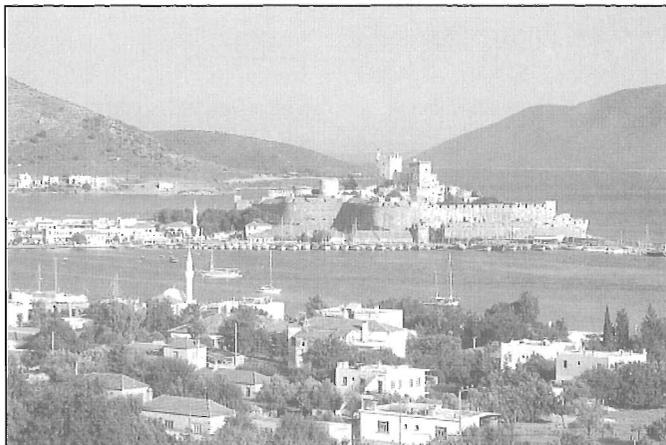
pyramid of Khufu at Giza, Egypt (*National Geographic* April 1988). Cynthia Eiseman and Brunilde Ridgway published *The Porticello Shipwreck: A Mediterranean Merchant Vessel of 415-385 B.C.* as the second volume in the INA Nautical Archaeology Series. Kevin Crisman published *The Eagle: An American Brig on Lake Champlain during the War of 1812*. George Bass received an Honorary Doctorate from Bogaziçi University, Istanbul.

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1988

After years of operating out of rented facilities, INA acquired a tract of land for its permanent headquarters in Turkey. By this time, there were twenty-two people on the INA roster in Bodrum, even during the reduced activities of winter. Many more, of course, visited Turkey each summer during the excavation and survey season. The generosity of several INA Directors enabled the purchase of a tract of land on a hill overlooking the growing city—without tapping the regular archaeological and operations budget.



1988 INA purchases a tract of land on a hill with a view of Bodrum harbor and the Castle of Saint Peter, which houses the Bodrum Museum of Underwater Archaeology.

There were three major INA projects underway in 1988. Don Keith and the Ships of Exploration and Discovery team returned to the Rio Belen in Panama to continue the search for the Columbus caravel *Gallega*. A magnetometer survey detected six magnetic anomalies that resembled those created by a wooden shipwreck or a large isolated iron object such as a cannon or anchor. However, difficulties in excavating through the thick, loose bottom sediments prevented any actual discoveries.

At Port Royal, 1988 represented a “catch-up year” with no planned excavations, while the team under Donny Hamilton recorded and studied the materials from prior years and continued their archival research. However, due to the construction of a government water line trench through old brick floors and walls in the city, the team had to mount an archaeological rescue operation. A considerable amount of information was recorded before it was lost forever. In September, Hurricane Gilbert severely damaged many of the facilities used by the Port Royal team.

In Turkey, Cemal Pulak’s team spent two weeks at Cape Gelidonya, searching for items that may have been missed by the pioneering underwater archaeologists in 1960. Among oth-

er things, two large Mycenaean III B stirrup jars finally confirmed the date of the shipwreck to the thirteenth century BCE. The team then moved on to Uluburun for almost two months, where they completely mapped the site and continued to lift the heavy cargo. Among the artifacts recovered were neck medallions that resembled those depicted on the necks of Syrians by Bronze Age Egyptian artists, and the first complete four-handled tin ingot.

These major projects did not exhaust the INA news in 1988. Fred Hocker and fel-

low students Mike Fitzgerald, Sam Mark, and Bob Neyland recorded a *coggeschip* from Almere, Netherlands, which sunk around 1425, was excavated in 1986, and published in 1997. This was an inland craft developed from the seagoing cogs.

In November, George F. Bass received the National Geographic Society Centennial Award. This placed him in the company of only fourteen other individuals of the caliber of Jacques-Yves Cousteau, Robert Ballard, Harold E. Edgerton, John Glenn, Jane Goodall, Sir Edmund Hillary, and Richard Leakey. Also in 1988, Bass published *Ships and Shipwrecks of the Americas*, with chapters by Donald Keith, Roger Smith, Jody Simmons, Dick Steffy, Kevin Crisman, W.F. Searle, Peggy Leshikar, and Ken Cassavoy.

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1989

Cemal Pulak directed the sixth year of excavations at Uluburun, Turkey, published in *UAP* (1990). The excavation of cargo and artifacts (apart from hull remains) in the upper slope area was virtually completed. Since the downslope areas were as much as 182 feet deep, bottom time was no more than 15 minutes, making excavation there a very slow process. As always, necessity was the mother of a number of valuable inventions. Claire Peachey developed a method for fixing badly corroded ingots with epoxy while still underwater so they could be raised without damage. SHARPS (Sonic High Accuracy Ranging and Positioning System), invented by INA Director Marty Wilcox, was indispensable for recording artifact locations. Dr. Carolyn Fife carried out research to develop safer decompression profiles for scientific diving at these depths.

In contrast, the sites at Port Royal, Jamaica, were so shallow that divers could stay on the bottom for more than three hours at a time. Donny Hamilton's excavations at Port Royal were continued for a ninth year, with labor again provided by the Texas A&M/INA field school. The team was surprised to find the remains of a ship that had sunk in the disturbances caused by the 1692 earthquake and torn through the floor of a building they were excavating. They also found two more partial skeletons of children killed by the disaster.

Don Keith had planned to continue the search for Columbus's *Gallega* into a fourth three-month season. However, for a variety of reasons, INA restructured its New World activities that year and the Ships of Exploration and Discovery Research Project no longer formed a part of the Institute.

George Bass conducted a three-week survey at Cape Gelidonya (in Geographica Section of *National Geographic*). Among other things, the survey showed that the sequence of wreck formation that had been assumed in 1960



1989 Before raising a copper ingot, Claire Peachey uses underwater-curing epoxy and a coat of Plaster of Paris to protect its eroded lower section.

was actually incorrect. A number of artifacts were scattered outside the original excavation area.

In many parts of the world during 1989, INA was engaged in the conservation and study of materials that had been excavated in prior years. Robin Percy and a small team continued cataloging, organizing, and drafting data from the seventeenth-century Mombasa wreck *Santo Antonio de Tanna*. Cemal Pulak and Gökhan Özagaçlı worked on materials from the sixteenth-century Ottoman wreck at Yassiada. Restoration of the eleventh-century "Glass Wreck" from Serçe Limanı, primarily by Sheila Matthews, neared completion in Bodrum. Jane Pannell prepared for the Glass Wreck exhibit and also conserved objects from Uluburun. Conservation of materials from Port Royal and the Molasses Reef Wreck also continued. The Governor of the Turks and Caicos Islands visited College Station in April to view the Molasses Reef artifacts. Fred Hock-

er returned to the Dutch Museum of Ship Archaeology at Ketelhaven to resume work on the Almere ship's hull reconstruction. Kathleen McLaughlin-Neyland and Bob Neyland worked on the remains of three other ships at Ketelhaven. Cheryl Haldane Ward studied ship timbers found at Lisht, Egypt, by the Metropolitan Museum of Art, and published them in *The South Cemeteries of Lisht*, Vol. III, by Dieter Arnold (Metropolitan Museum).

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1990

In January, the Meadows Foundation announced at the INA annual meeting in Dallas that it was giving \$200,000 to be matched by Texas A&M University to establish the Meadows Professorship in Biblical Archaeology. This position was to allow the expansion of INA

interests into the Holy Land, as well as to meet a demand for instruction on this area in the Nautical Archaeology Program. Joining INA later in 1990 as the first holder of the Professorship was Shelley Wachsmann, who had excavated the "Sea of Galilee Boat" while he was with the

Israel Archaeology Authority. That same year, Wachsmann published *The Excavations of an Ancient Boat from the Sea of Galilee (Lake Kinneret)*.

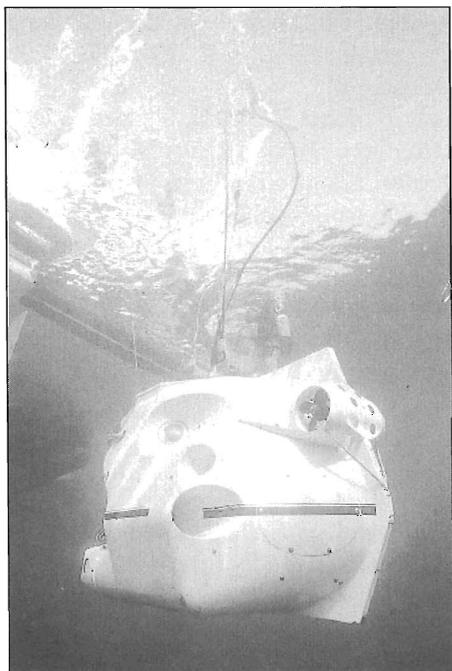
As one of the most significant events of 1990, the Serçe Limanı "Glass Wreck" permanent exhibit opened on June 17. The Turkish government had built a new exhibit hall at the Bodrum Museum especially for this exhibit. INA staff members Donald Frey, Robin Piercy, Frederick van Doorninck, and Jane Pannell spent much of the spring preparing for the opening and moving the Conservation Lab to new quarters in the Castle. The centerpiece of the display was the reconstructed Serçe Limanı ship. Although only about 20% of the original material survived, the steel stanchions and braces supporting the conserved hull were extended upwards to indicate the original size and shape. In addition, the wooden replica of part of the port side midships, built by Fred Hocker, shows how the ship was constructed. The hall also exhibits many of the artifacts found on the eleventh-century wreck. Part of the collection of Islamic glass was already housed in a special exhibit elsewhere in the museum.

In the field, INA was involved in both new and established work this year. In what had become the traditional pattern, the Turkish season began with more dives on the Bronze Age shipwreck at Cape Gelidonya. Additional artifacts were found. INA activities then shifted to Uluburun, where Cemal Pulak directed a seventh year of excavation at the even older and more spectacular Bronze Age site there. This site was published in the Geographica Section of *National Geographic*. The year marked the first substantial study of the hull remains, as well as the recovery of many more ingots.

Finally, INA's contingent in Turkey moved out for another session of surveying the coast. This year, the survey included dives on the 300-foot-deep Yalıkavak wreck in a one-person submarine provided by Henri Delauze of COMEX at his own expense. The site revealed a large and coherent pile of (probably first-century BCE Koan) amphoras, but it is too deep for excavation with current resources. While all this was going on, conservation and study continued in Bodrum on materials from the sixteenth-century Yassıada Ottoman ship, the Serçe Limanı glass cargo, and the Uluburun shipwreck. Sheila Matthews, Gökhan Özagaçlı, Jane Pannell, and Claire Peachey were among the INA personnel involved in this.

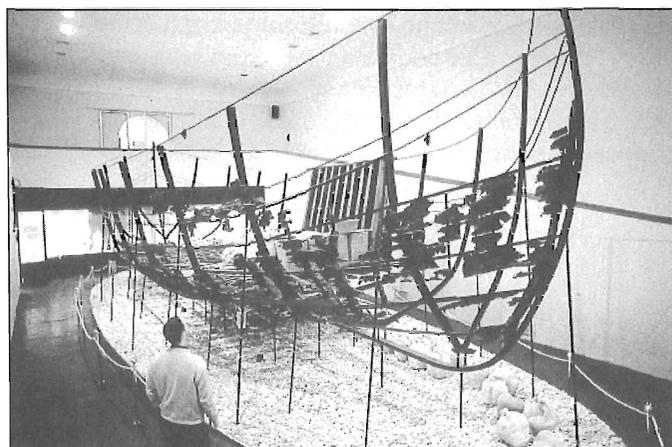
1990 marked the tenth and final season of field work at Port Royal, Jamaica, published in *UAP* (1991). The INA/Texas A&M project had excavated five buildings at the commercial center of the mercantile capital of the English New World. The 1990 season's crew also studied the remains of a ship (probably *HMS Swan*) found in one of the buildings. The Port Royal Project resulted in a more detailed body of data than any previous excavation of the town, whether on land or underwater. The long process of conserving, studying, and publishing the project findings still continues.

There were a number of new or resumed INA projects elsewhere in the New World that year. James Parent and an American and Jamaican team picked up the search for *Capitana* and *Santiago de Palos* in St Ann's Bay, Jamaica. The two caravels, grounded and lashed together, had formed Columbus's last camp in the Americas. Geographical surveys attempted to identify the 1504 shoreline and potential sites for the ships. Margaret Leshikar surveyed for pre-Columbian remains at Isla Cerritos,



1990 (left) A one-person submarine was used to survey the shipwreck at Yalıkavak.

1990 (below) The restored hull of the Glass Wreck in the exhibit hall of the Bodrum Museum of Underwater Archaeology.



Yucatan, Mexico (the main port for Chichén Itzá between 750 and 1200 CE). She also investigated the Wreck of the Ten Sail off Grand Cayman, published in *UAP* (1992). Fred Hocker began final recording and analysis of the Brown's Ferry vessel in Columbia, South Carolina.

The entire March 1990 issue of *The Biblical Archaeologist* was written by INA or Texas A&M faculty and students, including George F. Bass, Michael Fitzgerald, Cheryl Haldane Ward, Douglas Haldane, Nicolle Hirschfeld, Claire Peachey, Cemal Pulak; and Stephen Vinson. Cheryl Haldane Ward also published *The Pharaoh's Boat at the Carnegie* with D.C. Patch.

The arrival of Shelley Wachsmann was only one of the significant personnel changes at INA in 1990. Kevin Crisman, who had received his M.A. from the A&M Nautical Archaeology Program before earning a doctorate in American Studies at the University of Pennsylvania, returned to fill a new position in New World archaeology. On the other hand, J. Richard Steffy retired from INA and the Texas A&M faculty in September. However, as the Sara W. and George O. Yamini Professor of Nautical Ar-

chaeology, Emeritus, Dick Steffy has continued his involvement with INA. As the man who developed much of the specialized field of ship reconstruction, his help has been invaluable. Jerome Hall became the first Marion Cook Fellow, thanks to a generous endowment from Marian Miner Cook matched by Texas A&M University. Mrs. Cook was a former Chairman of the INA Board of Directors, the widow of founding Director John Brown Cook, and the mother of future Chairman Gregory M. Cook. In another important development this year, Donny Hamilton and Wayne Smith began experiments with silicone oils for conservation.

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1991

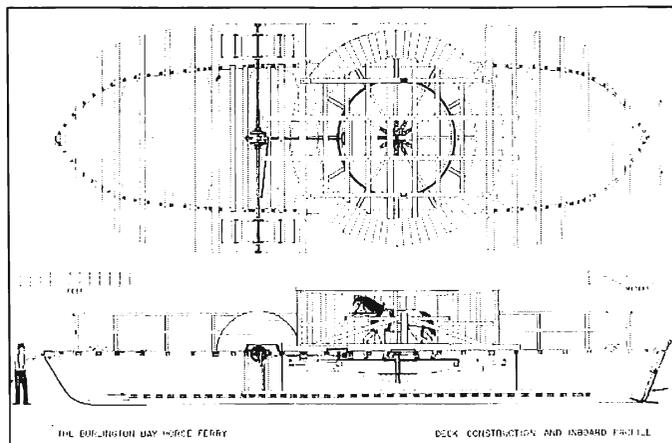
INA offices made two major shifts this year. The American headquarters moved from the Riverside Campus of Texas A&M University to new quarters near the center of the main campus in College Station. The move to the Anthropology Building allowed the Institute and the Nautical Archaeology Program to enjoy newly renovated surroundings and enhanced visibility. It also allowed closer coordination with the Anthropology Department, the Program's institutional parent. In Turkey, the new INA headquarters building in Bodrum was to provide centralized work and office spaces for the first time.

1991 INA moves to the Anthropology Building on the main campus of Texas A&M University.



In continuing research, field director Cemal Pulak and principal investigator George F. Bass directed the eighth year of excavation at the Bronze Age shipwreck at Uluburun, Turkey, published in *UAP* (1992). Work concentrated on raising as many of the metal ingots as possible, together with surrounding artifacts. It was discovered that the total number of ingots exceeded 350, nearly twice the initial estimates. In all, there were almost 10 tons of copper ingots and half a ton of tin ingots. It was fairly obvious why this is called the Bronze Age! Cheryl Haldane Ward was carrying out archeobotanical research on the Uluburun organic remains.

1991 Drawing by Kevin Crisman of the Lake Champlain Horse Ferry.



In 1991, INA began a collaboration with the Lake Champlain Maritime Museum. As the first project, Kevin Crisman of INA and Arthur Cohn of the Museum began their excavation of the Burlington horse-powered ferry of ca. 1830 in Lake Champlain. This excavation was conducted as a field school. Well-preserved remains helped illuminate this little-known, but once important, form of nautical propulsion. The results from the excavation were published in 1998 by Crisman and Cohn as *When Horses Walked on Water: Horse-Powered Ferries in Nineteenth-Century America* (Smithsonian Institution Press).

Another field school conducted by Jim Parrent covered the archaeology of Jamaica. During the final weeks of the school, the students assisted in the survey at St. Ann's Bay, where the search for Columbus's ships continued, also published in *UAP* (1992). A sonar survey added 21 possible sites to the six previously identified; 11 of these fit within the broad criteria established for locating the two caravels. Four of these sites were test-excavated, revealing one ballast dump site and three well-preserved shipwrecks, all most likely from the seventeenth or eighteenth century.

Elsewhere in the New World, Jerome Hall began excavation of the seventeenth-century shipwreck in Monte Cristi Bay, Dominican Republic, published in *UAP* (1992). David Robinson assisted Paul Johnston of the Smithsonian Institution in a study of the steamer *Indiana* in Lake Superior.

As usual, conservation and study work continued quietly in 1991. Artifact sources included the Mombasa Harbor Wreck, the Yassiada Ottoman Wreck, the Serçe Limanı Glass Wreck, the Uluburun and Cape Gelidonya Bronze Age wrecks, and Port Royal. In the field, the annual Turkish survey was joined by a preliminary survey of the Syrian coast.

At the beginning of this year, the *INA Newsletter* became the *INA Quarterly*. This name more accurately reflected the character that the publication had increasingly held for a number of years. It continues to serve as both a vehicle for informing the INA membership of the work being performed by the Institute and by the Nautical Archaeology Program at Texas A&M University, and also as a vehicle for students and faculty to publish timely accounts of their work.

Cemal Pulak continued the excavation of the Bronze Age shipwreck at Uluburun, Turkey, for a ninth year. It had been hoped that a season extended to four months might allow completion of the project, but the site proved to be even larger and richer than previously realized. The ingots—with the exception of fifteen left in place to protect delicate items beneath them—were finally all raised in 1992. Items found included the complete tusk of a small elephant, which required two months to free it from its matrix. Other finds included a hippopotamus incisor carved into the shape of a ram's-horn trumpet and the statuette of a

Fred van Doorninck was named Frederick R. Mayer Professor at Texas A&M University. This professorship was named for INA Director Frederick R. Mayer, who had played a significant part in the effort to establish a permanent INA endowment. Frederick M. Hocker was awarded a doctorate from the Nautical Archaeology Program at Texas A&M University and joined the faculty as the Sara W. and George O. Yamini Faculty Fellow. In 1991, Cemal Pulak became the first Mr. and Mrs. Ray H. Siegfried II Fellow at Texas A&M University. Mr. Siegfried, an inductee into the Oklahoma Hall of Fame, was the Chairman of the INA Board of Directors. His contribution was matched by Texas A&M to provide an endowment for the fellowship.

J. Richard Steffy published *The Athlit Ram*, with Lionel Casson, as the third volume in the INA Nautical Archaeology Series (Texas A&M University Press). This ram is still the best-preserved evidence for the construction of ancient warships. Dick Steffy's work on the ram revealed a very different pattern of construction than that seen on Mediterranean merchant ships.

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1992

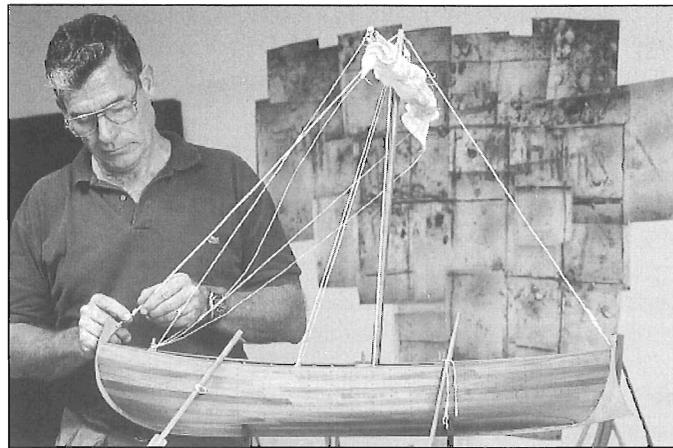
goddess. The survey of the downslope area reached a depth of 60 meters.

INA established a cooperative program in 1992 with the Museum voor Scheeparcheologie in Ketelhaven, The Netherlands. Although students in the Nautical Archaeology Program at Texas A&M University had pursued individual research projects with the Museum in the past, this was the first formal relationship between the institutions themselves. During the year, the new program facilitated excavation and study of two sixteenth-century ship excavations in the Netherlands by Kathleen McLaughlin-Neyland and Robert Neyland.

Sara W. and George O. Yamini Faculty Fellow Fred Hocker conducted the excavation of the Clydesdale Plantation Vessel, an eighteenth-century coastal sloop that had been buried under a river levee near Savannah, Georgia. The woods used in the vessel were typical southern species, so this was possibly the oldest American-built vessel ever studied. The operation involved hand excavation



1992 Fred and Emma Hocker survey the remains of the Clydesdale Plantation Vessel.



1992 Bill Charlton with his model of the Sea of Galilee Boat.

while standing waist-deep in mud the consistency of warm peanut butter. In 1992, Fred Hocker also supervised the move of the Brown's Ferry vessel to permanent exhibition site in Georgetown, South Carolina.

Kevin Crisman and Arthur Cohn continued with a fourth season on the Burlington Bay Horse Ferry, published in *UAP* (1993). A part of the Lake Champlain field crew under Joseph Cozzi conducted test excavations of a nearby sailing canal boat in Lake Champlain, published in *UAP* (1993, 1994, 1996). A final phase of the 1992 field season consisted of a two-week waterfront survey at Mount Independence, Vermont, a Revolutionary War fort across the lake from Fort Ticonderoga. The survey focused on the caissons for a floating bridge built in 1777 to connect the two forts.

In the Caribbean, the search for Columbus's two caravels continued in St. Ann's Bay, Jamaica. The archaeologists surveyed and explored more than twenty sites, finding several eighteenth-century British ships. Jerome Hall continued work on the Monte Cristi wreck in the Dominican Republic, published in *UAP* (1993). During the first two seasons, the excavators had found more than 13,000 pipe fragments.

In 1992, INA archaeologists and directors visited and established relations in Bulgaria, Rumania and Ukraine. This trip was useful to Fred van Doorninck's research on

the amphoras from the eleventh-century Serçe Limanı shipwreck, which paralleled types produced near the Sea of Marmara and Black Sea.

Other 1992 INA projects included an underwater survey in the Sea of Galilee, Israel, directed by Shelley Wachsmann. Bill Charlton built a model of the Sea of Galilee Boat excavated by Wachsmann. The survey of the steamer *Indiana* continued in Lake Superior, as did conservation from earlier projects.

The *Studies in Nautical Archeology Series* of Texas A&M University Press was inaugurated with publication of *Those Vulgar Tubes: External Sanitary Accommodations Aboard European Ships of the Fifteenth through Seventeenth Centuries*, by Joe Simmons.

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1993

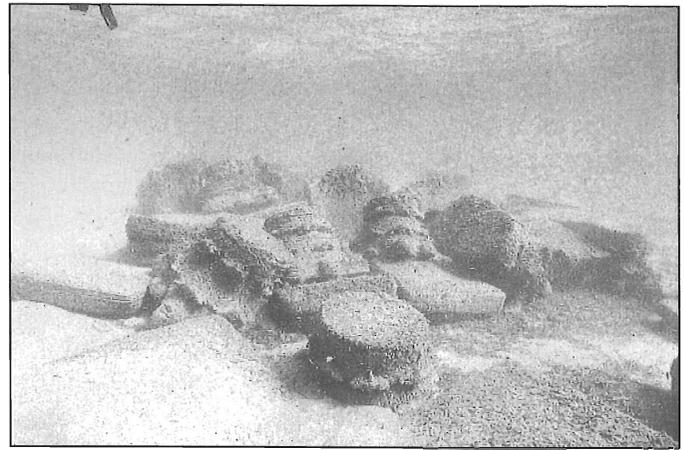
The excavation of the Bronze Age shipwreck at Uluburun, Turkey, continued under Cemal Pulak. This was planned to be the final season, but the discovery of further hull remains and additional artifacts showed that the wreck still had much to offer. The most exciting part of this tenth year at Uluburun was the documentation, study, and recovery of substantial portions of the hull. These showed that it was constructed with much the same shell-first, mortise-and-tenon methods as the Kyrenia Ship of a mil-

lennium later. Many artifacts were also recovered at Uluburun that year. During the fall, the annual underwater survey in Turkey by Cemal Pulak and Tufan Turanlı found a shipment of medieval millstones, a large Corinthian column, a Byzantine cargo of marble architectural elements, and a Byzantine amphora wreck off the southwest coast. A second team aboard a Turkish trawler carried out a sonar survey near Foça.

On Lake Champlain, INA had several projects underway. The arrival of the Zebra mussel made lake archaeology all the more urgent. Kevin Crisman and Arthur Cohn directed a study of the schooner *Water Witch*, originally built (as a steamer) in 1832 and lost in 1866. Crisman also continued the underwater survey at Mount Independence, Vermont. Elizabeth Baldwin directed a study of the sidewheel steamship *Champlain II*, published in *UAP* (1994). John Bratten set up a conservation laboratory at the Lake Champlain Maritime Museum to treat the artifacts from these and other joint projects of INA and the Museum.

Three somewhat smaller INA-connected projects also continued in 1993. Robert Neyland directed the excavation of a 17th-century Dutch freighter with the Center for Ship Archaeology in the Netherlands. Jerome Hall continued working on the Monte Cristi "Pipe Wreck" in the Dominican Republic, published in *UAP* (1994). This now appeared to be an English-built ship that had been carrying mostly Dutch-made goods. Finally, the survey of the steamer *Indiana* continued in Lake Superior.

There was also much incidental news in 1993. George Bass became the George O. Yamini Family Professor of Liberal Arts at Texas A&M University. This was the second professorship established through the generosity of the Yamini family. Kevin Crisman received the Award of Merit from the Society for Historical Archaeology. Roger Smith published *Vanguard of Empire: Ships of Exploration in the Age of Columbus* (Oxford). Donny Hamilton became head of the Nautical Archaeology Program at Texas A&M.

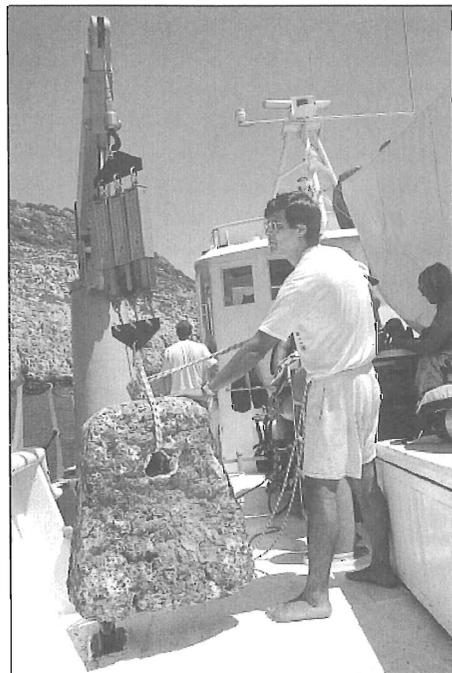


1993 The Turkish underwater survey team found a shipment of marble architectural elements.

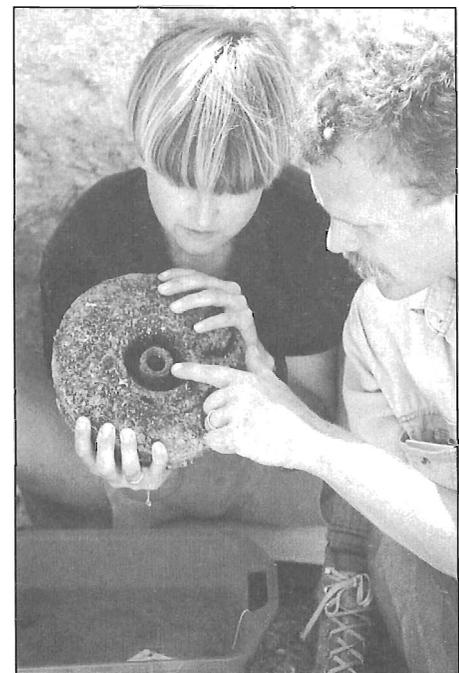
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1994

After eleven seasons of excavation, the field work at Uluburun, Turkey, concluded on September 7. Since 1984, the INA archaeologists had made 22,413 dives and had spent 6,613 hours on the wreck, exclusive of the much longer descent, ascent, and decompression times. This was by far the longest and largest excavation INA had ever undertaken. The last season yielded another rich collection of hull remains, ceramics, other artifacts, and organic remains. In addition, three team members took more than 7000 measurements of the seabed during 1994 in order to create a detailed contour map of the site. This will help to comprehend the forces affecting the dispersion of the ship and cargo as a step towards reconstruction. It had become clear that the ship was probably Levantine or Cypriot in origin, but was carrying one, or more likely two, high-ranking Mycenaean passengers.



1994 Cemal Pulak weighs the Cape Gelidonya stone anchor onboard *Virazon*.



1994 Cheryl Ward and Doug Haldane examine an artifact from the *Sadana Island* wreck.

Confirmation of the details of the wreck would await years of conservation work and careful study. Claire Peachey was hired as INA's second full-time conservator to work on the Uluburun material. The Bodrum Museum broke ground that busy summer for the Bronze Age Shipwreck Hall that will eventually house the Uluburun displays. The crusader's chapel in the Castle was to provide the setting for the Yassiada exhibit then in preparation. As a result, INA conducted a rescue excavation of the Hellenistic through modern levels beneath the chapel floor—INA's first land excavation! A summer school in the conservation of submerged antiquities was held at the Museum in 1994, sponsored by the National Endowment for the Humanities. Among the factors that made this possible was the construction of dormitory facilities at the INA headquarters in Bodrum. The ability to house visiting students and scholars has greatly expedited the conservation, study, and publication of artifact collections such as the Serçe Limanı glass.

The Turkish underwater surveys were continued in 1994 by Cemal Pulak. This year, Murat Tilev finally located the Cape Gelidonya ship's anchor. The survey also found three medieval wrecks and one from the first century CE. INA put the skills learned in two decades of Turkish surveys to work in a survey of the Red Sea off Egypt. The survey directors, Douglas Haldane and Cheryl Haldane Ward, located several shipwrecks, including the eighteenth-century porcelain carrier that INA-Egypt later excavated at Sadana Island. Also in 1994, Shelley Wachsmann began a survey of Tantura Lagoon near Dor, Israel, jointly with Haifa University. In this first season, the team found a Byzantine-period shipwreck and began excavation.

A ribbon-cutting ceremony officially opened INA's Bodrum Center this year, which also marked the opening of the first new Turkish excavation since 1984. Fred Hocker began work that summer on a ninth-century Byzantine shipwreck at Bozburun. This site was located during INA's first survey in 1973, and had originally been slated for excavation in 1983. However, discovery of the spectacular Uluburun wreck put all other Turkish excavations on hold. The Bozburun ship will fill a major gap in our knowledge. The ninth century is unusually poorly represented in the archaeology of the eastern Mediterranean. This is unfortunate, since the period between the seventh-century Yassiada and eleventh-century Serçe Limanı ships was one of rapid change in trade and technology.

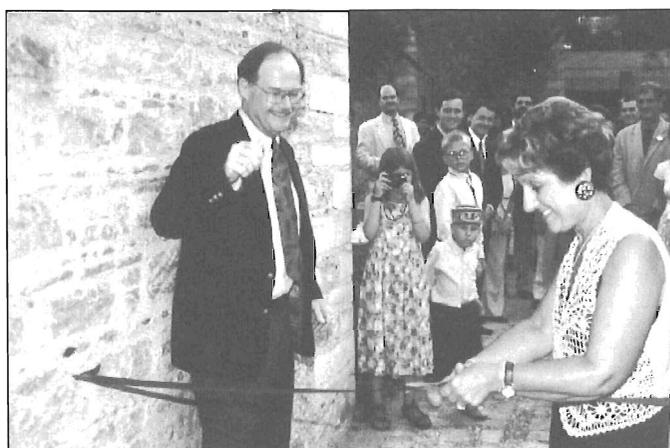
Bozburun was not the only INA project in 1995. Doug Haldane and Cheryl Haldane Ward began their excavation of an eighteenth-century wreck at Sadana Island in the Red Sea, published in *IJNA* (1996). This site was noteworthy both for its fine collection of Chinese porcelain, intended for the Middle Eastern market, and for the unusual

The New World was not ignored that year, either. Gregory D. Cook returned to St. Ann's Bay, Jamaica, for the excavation of the Reader's Point Vessel, an eighteenth-century sloop. The well-preserved hull provided considerable information on these important colonial vessels. The Lake Champlain team led by Kevin Crisman spent the year working with all the data they had collected in previous campaigns.

In 1994, J. Richard Steffy published *Wooden Ship Building and the Interpretation of Shipwrecks* (Texas A&M University Press), the one indispensable volume for anyone interested in the construction of old wooden ships. Margaret Leshikar published *The Wreck of the Ten Sail*, her study of the famous foundering of nine merchant ships and their naval escort on the Cayman reefs. Claude Duthuit, INA Director and diver on the Cape Gelidonya and Yassiada Byzantine ships, was named to the French Legion of Honor, for his pioneering role in the development of underwater archaeology as well as his work in defense of intellectual property rights.

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1995



1995 INA Director Danielle Feeney and George Bass at the ribbon-cutting ceremony which officially opened INA's Bodrum Center.

construction of the ship itself. In the fall, INA and the Haifa University Center of Maritime Studies continued their work in Tantura Lagoon with the further excavation of the Byzantine shipwreck and the discovery of several more vessels in the immediate area. The Lagoon was proving to be a truly remarkable place to do nautical archaeology. INA Director Marty Wilcox contributed a state-of-the-art side scanning sonar for use in the annual Turkish coastal survey directed by Don Frey.

Two Texas A&M Nautical Archaeology Program graduate students directed projects in Lake Champlain, and one on the Northeast U.S. Coast. Erika Washburn studied the Royal Navy 1812 brig *Linnet*, while Eric Emery studied the U.S. Navy 1812 gunboat *Allen*. Both projects were published in *UAP* (1996). Stefan Hans Claesson led the excavation of *Annabella*, a nineteenth-century coasting schooner in Cape Neddick, Maine.

Other events of 1995: Fred Hocker established a cooperative arrangement between INA and the Danish National Museum's new Center for Maritime Archaeology. The College Station-Roskilde alliance led to many fruitful



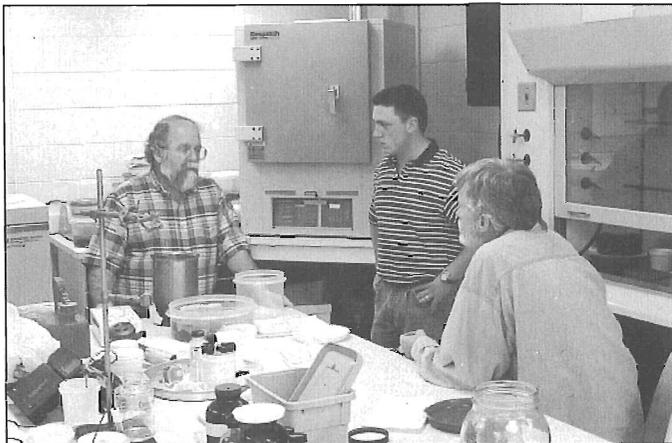
1995 Fred Hocker examines a group of ceramic jars found at Bozburun.

exchanges of scholars in the years ahead. Wayne Smith advised the Instituto de Cultura Puertorriquena, Consejo de Arqueologia Subacuatica (Council of Underwater Archaeology), San Juan, Puerto Rico, on the feasibility of developing a conservation facility. Shelley Wachsmann published his award-winning *The Sea of Galilee Boat: An Extraordinary 2000 Year Old Discovery*. Conservation and study of the fruits of over two decades of INA labors continued on four continents.

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1996



1996 In the newly established Archaeological Preservation Research Laboratory, Wayne Smith (at left) introduces professionals from the Texas A&M Veterinary College to silicone oil technology.

A guiding principle for INA from the beginning has been that archaeology only begins with an excavation; it does not end there. The movement of artifacts without proper conservation, study, and publication is only an act of vandalism. Accordingly, 1996 may be seen as "the year of the laboratories." In College Station, Texas A&M University established the Archaeological Preservation Research Laboratory, with Wayne Smith as Director. In the Texas A&M Conservation Lab, a team under Donny Hamilton began conservation of cannons and other materials from *La Belle*, the ship of René Robert Cavalier, Sieur de la Salle, discovered by Barto Arnold in Matagorda Bay. INA-Egypt and Egypt's National Maritime Museum established the Alexandria Conservation Laboratory for Submerged Antiquities. In the laboratories of the Bodrum Museum of Underwater Archaeology, conservation, study and documentation of the Uluburun artifacts continued, with the addition of the finds from Bozborun. Jane Pannell also devoted attention to the care and examination of many of the artifacts excavated in the 1960s at Cape Gelidonya that had been in storage ever since. George F. Bass and Frederick

H. van Doorninck, Jr., continued their study of the cargo from the eleventh-century Serçe Limanı "Glass Wreck." This was also the year that Fred van Doorninck retired as the Frederick R. Mayer Fellow of Nautical Archaeology.

The three major excavations of the previous year continued in 1996. Fred Hocker conducted a second campaign on the Byzantine wreck at Bozborun, Turkey, published in *UAP* (1997). The team removed the upper level of sediment and cultural material from the site, including over 140 whole or nearly whole amphoras and nearly a ton of other ceramic material. Hocker's group also took their first look at the structure of the ship itself.

Cheryl Haldane Ward and Doug Haldane continued their excavation of the eighteenth-century wreck at Sadana Island, Egypt. More than 1500 registered artifacts were recovered, as well as bulk finds of porcelain, earthenware, copper alloy, and various organic materials. Most of this material was transported to the new lab in Alexandria for conservation and study.

Shelley Wachsmann continued work at Tantura Lagoon, the principal harbor of ancient Dor in Israel. By now, the small area of the Lagoon under investigation was looking like a parking lot for sunken ships. There has rarely been a richer area for archaeologists to work. Wachsmann also conducted a preliminary survey off Ashkelon, Israel.

Bob Neyland and Maria Jacobsen directed the excavation of a late medieval inland merchant vessel found in the Dutch polders. This project was carried out in cooperation with the Center for Ship Archaeology.

Surveys played an important part in INA's 1996 program. The annual underwater survey in Turkey located the wreck of a ship from the mid-fifth century BCE. Its future excavation will provide archaeologists with their first look at a vessel from the period when Classical Athens was rising to dominate much of the Mediterranean world. Kevin Crisman and Arthur Cohn began a survey for shipwrecks at Angra Bay, Terceira Island, Azores. This was an important jumping-off-place for ships headed out from Europe to the rest of the world during the Age of Discovery and Exploration. The survey was supported by



1996 Shelley Wachsmann and his team excavate an early ninth-century shipwreck in Tantura Lagoon.

Brian Jordan's research in the Portuguese archives in Lisbon.

1996 saw a number of INA-related books. Donny Hamilton published *Basic Methods of Conserving Underwater Archaeological Material Culture*. Thomas Oertling published *Ships' Bilge Pumps: A History of Their Development, 1500-1900*, as the second volume in the *Studies in Nautical Archaeology Series* (TAMU Press). The third volume was *The Development of the Rudder: A Technological Tale* by Lawrence V. Mott. George Bass published *Shipwrecks in the Bodrum Museum of Underwater Archaeology*.

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1997

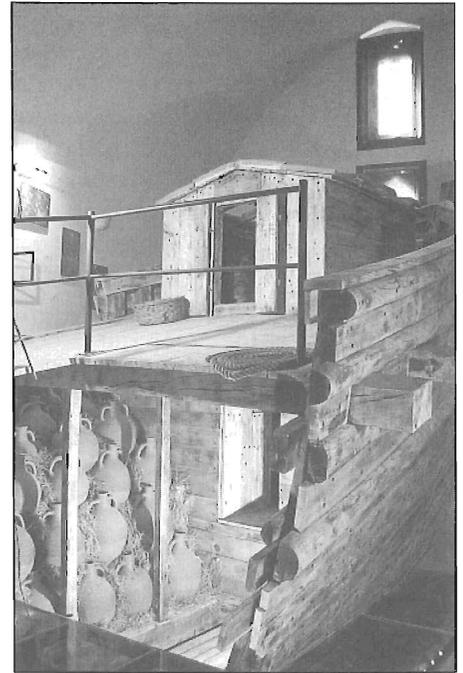
President Demirel of Turkey opened the Yassıada exhibit in the Bodrum Museum of Underwater Archaeology. The center of this exhibit is a full-scale replica, designed and mostly built by INA and Texas A&M faculty, staff, and students, of the stern and galley of the seventh-century Byzantine ship. The opening of the exhibit fulfilled a longstanding dream of Oğuz Alpözen, Director of the Museum and one of the oldest friends of INA.

Full reports on the 1997 work of the Institute of Nautical Archaeology will be appearing in forthcoming issues

of the *INA Quarterly*. For now, a short listing of some of the projects must suffice. Fred Hocker directed another season of excavation on the Byzantine shipwreck at Bozburun, Turkey. Donny Hamilton began in earnest to conserve the hull and contents of La Salle's flagship *La Belle* in College Station. This was published in the May 1997 *National Geographic*. Ralph Pedersen directed the excavation of a fourth-century wreck in Eritrea. Eric Heinold and Christopher Sabick directed the recording of the War of 1812 wrecks *Tecumseh*, *Newash*, and *Nancy* in Ontario, Canada.



1997 (above) President Suleyman Demirel of Turkey (in center) and Oğuz Alpözen (at right) opened the Yassiada exhibit in the Bodrum Museum of Underwater Archaeology.



1997 (right) A full-scale replica of the stern and galley of the seventh-century Byzantine ship excavated at Yassiada.

Kevin Crisman and Arthur Cohn's survey for shipwrecks off the south coast of Terceira Island, Azores, continued. The two also recorded two canal boat wrecks in Lake Champlain, and Cohn discovered an intact gunboat from Benedict Arnold's 1776 Revolutionary War flotilla in Lake Champlain. Jerome Hall began the study for publication of the hull of the Sea Of Galilee Boat in Israel. Of course, conservation and study of the cultural material from all the prior INA projects listed in this history continued throughout the world.

There were several old faces wearing new hats in 1997. INA Vice-President Cemal Pulak, who had been involved with the Institute since 1975, joined the faculty of the Nautical Archaeology Program at Texas A&M University. Another new A&M faculty member was Wayne Smith, who has been involved in the conservation of INA finds for many years. Barto Arnold, discoverer of *La Belle*, joined the INA team as the director of a new program focusing on the many archaeological sites along the Texas coast. Gary Martin became President of the INA Foundation, with responsibility for developing the resources needed to carry the work of the Institute forward into its second quarter century.

This was another busy year for books by INA faculty, staff and students. Chatham Press obtained United Kingdom rights for *Studies in Nautical Archaeology*. Fred Hocker published *A Small Cog, Wrecked on the Zuiderzee in the Early 15th Century*, with K. Vlierman. Sam Mark, the

second Mr. and Mrs. Ray H. Siegfried II Fellow, published *From Egypt to Mesopotamia: A Study of Predynastic Trade Routes* as the fourth volume in the *Studies in Nautical Archaeology Series*. The year also saw publication of a second edition of *Those Vulgar Tubes* by Joe Simmons. Shelley Wachsmann's *The Sea of Galilee Boat* won the Biblical Archaeology Society's Biannual Award for the Best Popular Book on Biblical Archaeology published in 1995-1996. The summer issue of the *INA Quarterly* (24.2) catalogued the thesis and dissertation research—often on INA projects—of graduates of the Texas A&M Nautical Archaeology Program since the first class in 1978. It is an impressive roll of honor, as well as a reminder of how much INA has contributed to the state of nautical archaeology over the past quarter century.

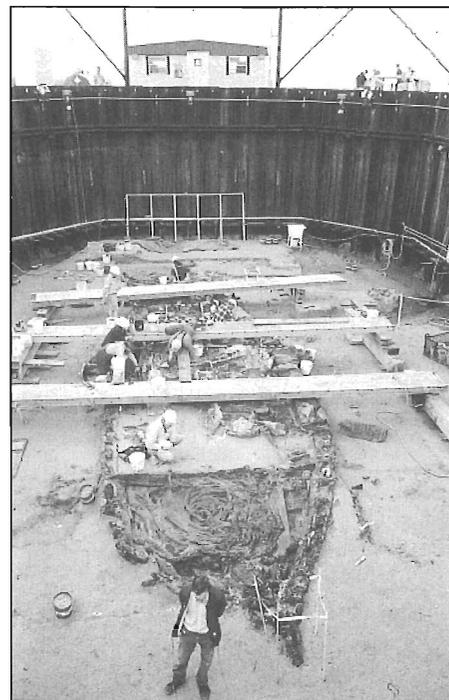
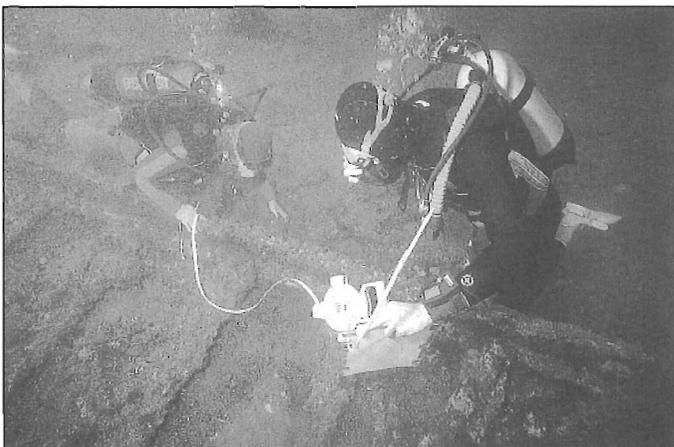
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1998

Again, descriptions of INA's work in 1998 will be forthcoming in the *INA Quarterly*. However, it is worth noting that the beginning of the year has already seen publication of *Seagoing Ships and Seamanship in the Bronze Age Levant* by Shelley Wachsmann (Texas A&M University Press) and *When Horses Walked on Water: Horse-Powered Ferries in Nineteenth-Century America* by Kevin Crisman and Arthur Cohn (Smithsonian Institution Press). There is much good archaeology underway, but there is much more to be done as INA celebrates its twenty-fifth anniversary and moves confidently into its future. ☞

1998 (right) Artifacts and hull remains from the excavation of La Belle are currently undergoing conservation in the Texas A&M Conservation Lab headed by Donny Hamilton.

1998 (below) Kevin Crisman and his team survey Lidador, wrecked in Angra Bay, Azores.



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